border archaeology

unearth the past....resolve the future

Commercial Archaeology

Working throughout England and Wales

Archaeological Observation

For

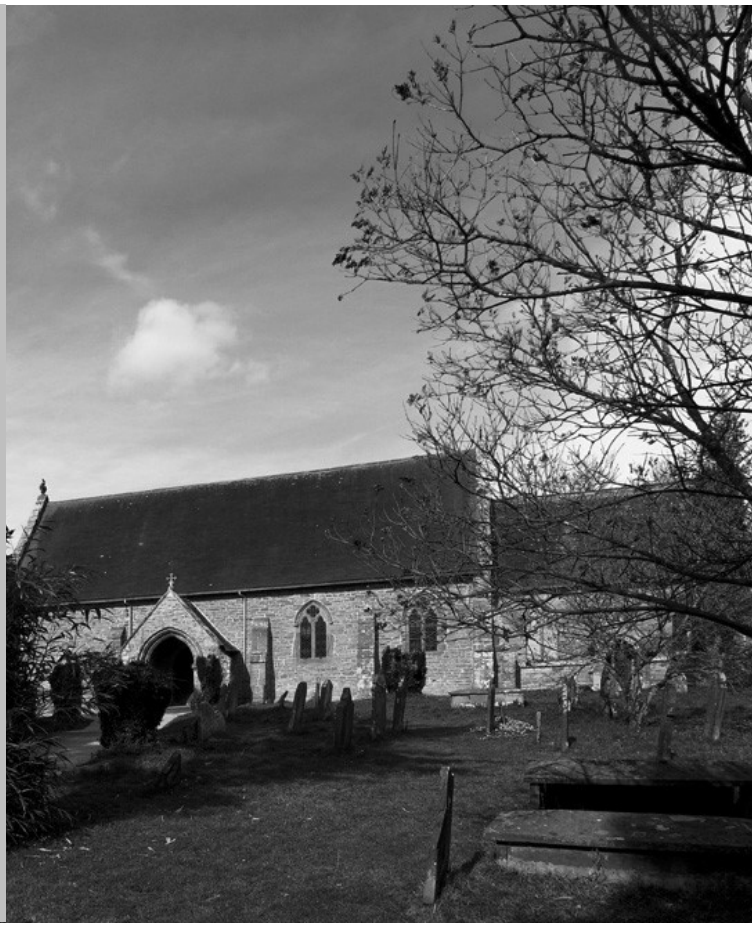
Bristol Water

Water Main Replacement

Knowle Reservoir to Victoria Reservoir Bristol

January 2015

BRISTOL WATER



border archaeology
unearth the past....resolve the future

Report Specification:

Archaeological Observation & draft report:
Claire McGlenn BA

Artwork:
William Logan BA PgDip

Editing:
George Children MA MCl*f*A

Final Edit & Approval:
Neil Shurety Dip.M G M Inst M

Report Ref:
BA1233BWKV

Grid Reference:
NGR ST 5769 7366– ST 6099 7065

Date:
January 2015

Border Archaeology Regional Offices

Midlands & North (Head Office)
Chapel Walk, Burgess Street, Leominster,
Herefordshire, HR6 8DE
T: 01568 610101
E: midlandsandnorth@borderarchaeology.com

West & South West
Park House, 10 Park Street, Bristol, BS1 5HX
T: 0117 907 4735
E: westandsouthwest@borderarchaeology.com

East
Luminous House, 300 South Row, Milton Keynes, MK9 2FR
T: 01908 933765
E: east@borderarchaeology.com

South & South East
Basepoint Business Centre, Winnal Valley Road
Winchester, Hampshire, SO23 0LD
T: 01962 832777
E: southandsoutheast@borderarchaeology.com

Midlands & North	West & South West	East	South & South East
01568 610101	0117 907 4735	01908 933765	01962 832777

Border Archaeology Limited: Registered Office: 45 Etnam Street, Leominster, HR6 8AE
Company Registration No: 07857388

Contents:

1 Executive summary

This report details the results of the programme of archaeological observation undertaken by Border Archaeology (BA) on behalf of Bristol Water intermittently during water mains replacement works in Bristol city centre between June 2013 and November 2014. This extensive programme of work followed BA's observation of initial enabling works carried out in the Haymarket in April 2013.

- *Human remains were discovered during the initial enabling works at the Bay Horse PH in the Haymarket, located at the southwest extent of the former churchyard of St. James' Priory. The discovery supports the findings of previous investigations carried out within the former Priory grounds, the majority of which produced evidence of human remains comprising both in-situ burials and disarticulated skeletal material.*
- *Historic maps published between 1673 and 1828 map clearly show the boundaries of the Priory and churchyard (prior to its subsequent reduction to create a hay and coal market in the 1830s). This boundary is defined by Silver Street to the W, St James's Parade to the north, Horsefair to the S and by a lane formerly known as 'St James's Churchyard' to the E (no longer in existence).*
- *An extensive number of carriageways within the centre of Bristol were impacted during the principal phase of engineering ground works, an area defined by Park Row (ST 58184 73121) to the northwest and the Bath Bridge Roundabout (ST 359621 172261) to the southeast.*
- *The excavation work confirmed that, although large areas of the archaeological record had been truncated in the late 19th –early 20th century as a result of development activity, pockets of surviving archaeological deposits and structural remains were identified and recorded throughout the extent of the scheme.*
- *The results revealed a previously undisturbed area of St. James's cemetery within the SE corner of Trench 1, where the remains six burials situated within the pipeline route were excavated; a seventh potential burial was left in-situ. The remains were all found to predate the 1850s, when St. James churchyard was closed for burial. Skeletons (125) and (119) both appeared to have been truncated by a service main installed in the 19th century.*
- *The remains provided an indication of the demographic profile of the cemetery as a whole. This small group included two young males aged 25-35 years and three other individuals whose age and sex could not be determined. Charnel and disarticulated material was also recovered and this was thought to represent an individual of unknown age and sex, an older woman and a younger individual aged 16-23 years at death.*
- *Whilst a high incidence of activity-related markers was noted, measurements of stature corresponded well with data from high-status cemetery groups found elsewhere, which averaged 171cm. Consistent with this, it was noted that one individual (119) had sustained three leg-fractures, all of which were very well-healed and well-aligned, suggesting that he or she received the kind of medical attention available only to the wealthier classes at this time.*
- *A likely case of gout caused by a rich diet was also recorded, providing further evidence of the high status. One individual with dentition was analysed (124): this young man had moderately good dental health; no caries or abscesses were present but moderate amounts of calculus suggested a diet high in protein but low in sugar and carbohydrate.*

- *Engineering works at the northwest extent of Union Street revealed post-medieval structural remains relating to properties that formerly stood on St. James Back and the Horsefair, as depicted on the map of central Bristol drawn initially by John Plumley and completed by George Ashmead, the City Surveyor, in 1828.*
- *Trench 13 on Upper Maudlin Street revealed a wall foundation (1306) which appeared to relate to an internal cellar beneath the premises located on the northeast side of the Welsh Baptist Chapel, as shown on Ashmead's map of 1855, the fire insurance plan of 1887 produced by the firm of Charles E Goad Ltd and is still present on subsequent editions of the Ordnance Survey. A structure of similar dimensions is shown in this location on Ashmead's map of 1828, prior to construction of the Chapel building.*
- *A wall foundation located on Perry Road related to a former property at the southwest end of Griffin Lane.*
- *Excavations on Park Row revealed an earlier road surface of tightly packed, rough-hewn stones, most likely post-medieval in date, although no dating evidence was recovered.*
- *Excavations in Castle Park uncovered the substantial remains of building foundations relating to properties that formerly stood on Dolphin Street in what is now Castle Park.*
- *Remains of cellarage were excavated relating to former properties that were built in Bridge Street in the 1760s*
- *The remains of a stone-lined well-shaft (2518) were revealed in the Castle Park area close to the junction of Dolphin Street and Peter Street, both of which suffered heavy bomb damage during the Second World War and are now subsumed within Castle Park following extensive post-war clearance and landscaping activity. The well-shaft is situated in close proximity to the site of 'St. Edith's Well', which is first mentioned in a documentary reference of 1391 (and was later known as 'St. Peters Pump'), and a second well shaft which was sunk in 1766 slightly to the east. The location, substantial construction and depth of (2518) indicate that it is almost certainly one of these wells.*
- *The well was capped and access was restricted to the extent that only very limited investigation was possible by means of a small void. The well was found to be some 23m deep and appeared to be of solid construction.*
- *A rather crudely built masonry structure (2510) which had been truncated during the previous installation of a gas-main appeared to be associated with the well (2518) and may possibly represent either a superstructure or part of an adjoining building formerly fronting onto Dolphin Street. However, the gas main had removed any evidence of a relationship and the precise nature of the masonry structure remains unclear.*
- *Based on the grid reference obtained for the location of the well-shaft revealed during the programme of archaeological observation in Castle Park, it appears more likely that this relates to the mid-18th -century well, rather than its medieval predecessor.*

2 Introduction

Border Archaeology (BA) was instructed by Bristol Water to carry out Archaeological Observation of engineering groundworks relating to the replacement of a water pipeline extending through Bristol City Centre between Knowle Reservoir and Victoria Reservoir (*figs. 1, 2 & 3*). Observation of initial enabling works was undertaken in April 2013 (*fig. 2*), the main programme of archaeological work extending from June 2013 to November 2014.

The groundworks largely followed the course of a 19th –century main running from the NW extent of Park Row (NGR: ST 58184 73121) to the NW side of Bath Bridge roundabout (NGR: ST 359621 172261) along existing carriageways, with the exception of the pedestrianized area on The Haymarket and Castle Park.

The aim of the observation programme was to locate and record any archaeological finds, features or deposits within the ground works area and to confirm that no impact on the archaeological resource occurred during the course of the ground works without the implementation of a programme of archaeological recording.

The engineering methodology comprised the following components:

- Open-cut trenching to slip-line the existing main
- Longer trenches to reroute the pipe through previously undisturbed ground (Victoria Street & the NW extent of Union Street) in areas where the existing main was inaccessible
- Access pits & initial enabling works

2.1 Soils & Geology

The area is classed as unsurveyed in the Soil Survey of England and Wales (SSEW, 1983); however, the underlying solid geology is recorded as consisting of Redcliffe Sandstone of the Triassic period.

3 Methodology

The archaeological programme of work detailed herein was carried out in accordance with recognised sources of professional guidance, including *Standard and Guidance for an archaeological watching brief* (IfA 2008), *Standard and Guidance for archaeological excavation* (IfA 2008) and *Management of Research Projects in the Historic Environment* (MoRPHE) (EH 2006). Border Archaeology adheres to the IfA *Code of conduct* (2013) and *Code of approved practice for the regulation of contractual arrangements in archaeology* (2008) and work was carried out in compliance with Bristol Water's *Code of Conduct*.

In view of the likelihood of encountering human remains during the course of the ground works, specific reference was also made to the following sources of professional and ethical guidance:

- IFA Technical Paper No. **13** (McKinley & Roberts 1993)
- IFA Paper No. **7** (Brickley & McKinley 2004)
- *Human Bones from Archaeological Sites: Guidelines for producing assessment documents and analytical reports* (English Heritage 2004)
- *Guidance for best practice for treatment of human remains excavated from Christian burial grounds in England* (English Heritage & The Church of England 2005)
- *Burial Law and Policy in the 21st century: The way forward* (MoJ 2007)
- 'Statement on the exhumation of human remains for archaeological purposes' (MoJ Oct. 2011)

All groundworks were carried out under archaeological supervision by machine with, wherever possible, a toothless bucket fitted. Where archaeological deposits were identified, machining was halted and excavation proceeded by hand, wherever this was deemed practicable in terms of accessibility and with due regard to Health & Safety.

Upon discovery of human remains, Avon & Somerset Police were notified in the first instance and instruction sought. All subsequent discoveries were reported to Avon Coroner's Office and any human remains to be removed were subject to the appropriate environmental health regulations, coroner information and in compliance with the Disused Burial Grounds (Amendment) Act 1981. Reburial of excavated remains has been arranged in consultation with the Diocese of Bristol and will be carried out with due reverence.

All work concerning the removal, storage and reburial of human bone assemblages was undertaken by means of established professional practice as detailed in the company's *Archaeological Field Recording Manual* (BA 2014) and in accordance with the above

Full written and photographic records were made in accordance with the BA *Archaeological Field Recording Manual*. The written record comprised numbered context record sheets and plans & sections were produced on gridded, archive-stable polyester film at scales of 1:10 or 1:20, as appropriate. All drawings were numbered and listed in a drawing register, these drawing numbers being cross-referenced to written site records.

A photographic record was made using a high-resolution (12 MPX) digital camera, comprising photographs of all excavated contexts and archaeological features and structures. Included in each photograph are appropriate scales and all photographic records have been indexed and cross-referenced to written site records. Details concerning subject and direction of view are maintained in a photographic register, indexed by frame number.

Exposed features were subject to a sampling methodology based on criteria set out in the brief, namely, 50% of enclosure ditches; 10% of linear boundaries; 50-100% of pits (depending upon quantities of material culture present); 100% of burials and 100% of any structural remains revealed.

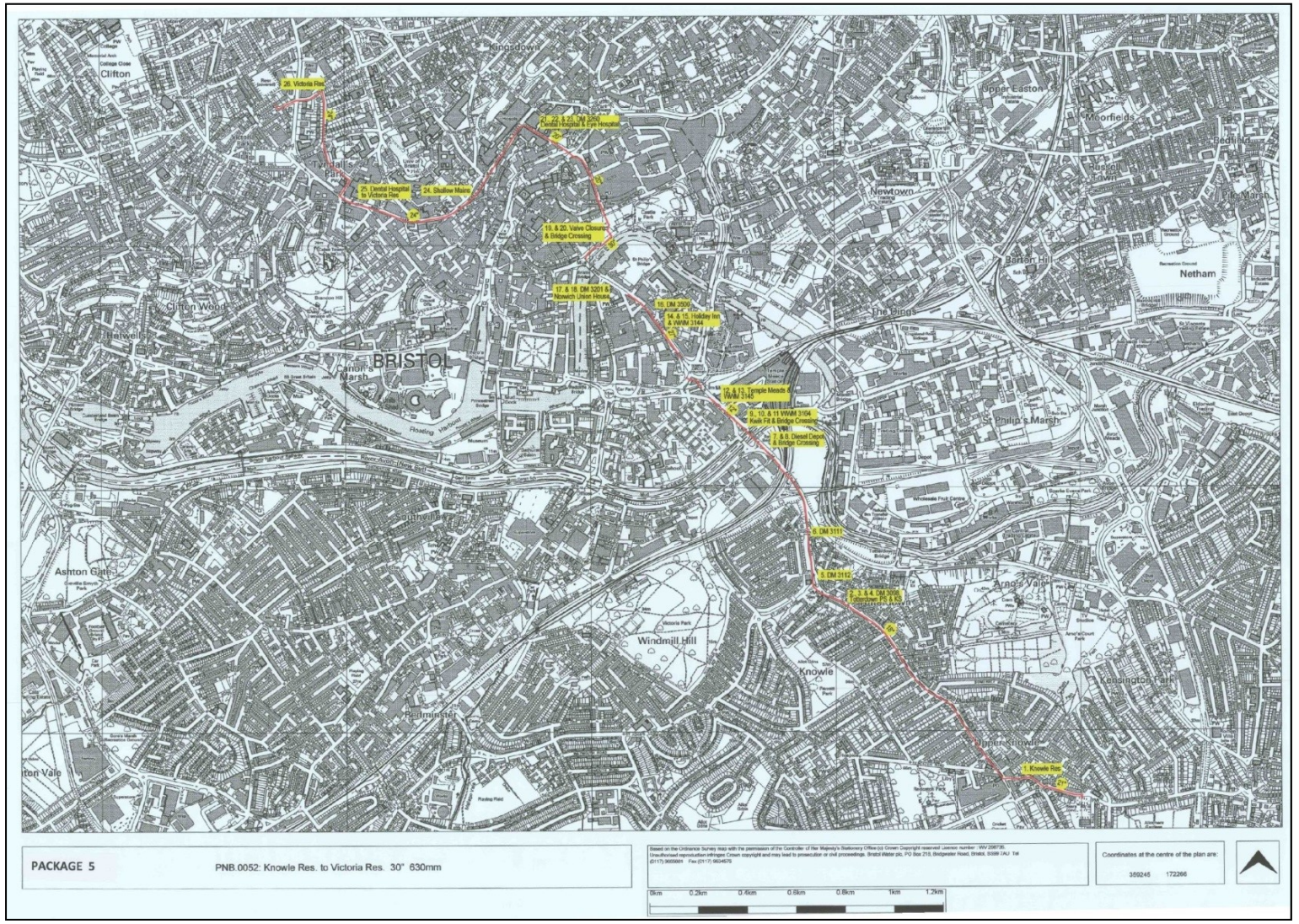


Fig 1: Bristol Water scheme map showing the route of the replacement water main marked in red

4 Enabling Works: NE of the Bay Horse Public House (PH)

Archaeological Observation of initial enabling works was carried out on April 26th 2013 following the discovery of human skeletal remains. A three-tonne mini digger and toothless bucket was used to open a single pit (Pit 1) on the pedestrian island to the NE of the Bay Horse PH in The Haymarket and S of the existing boundary of St. James' Park - formerly the Priory of St. James, a 12th -century foundation, and its associated churchyard (*fig. 2*).

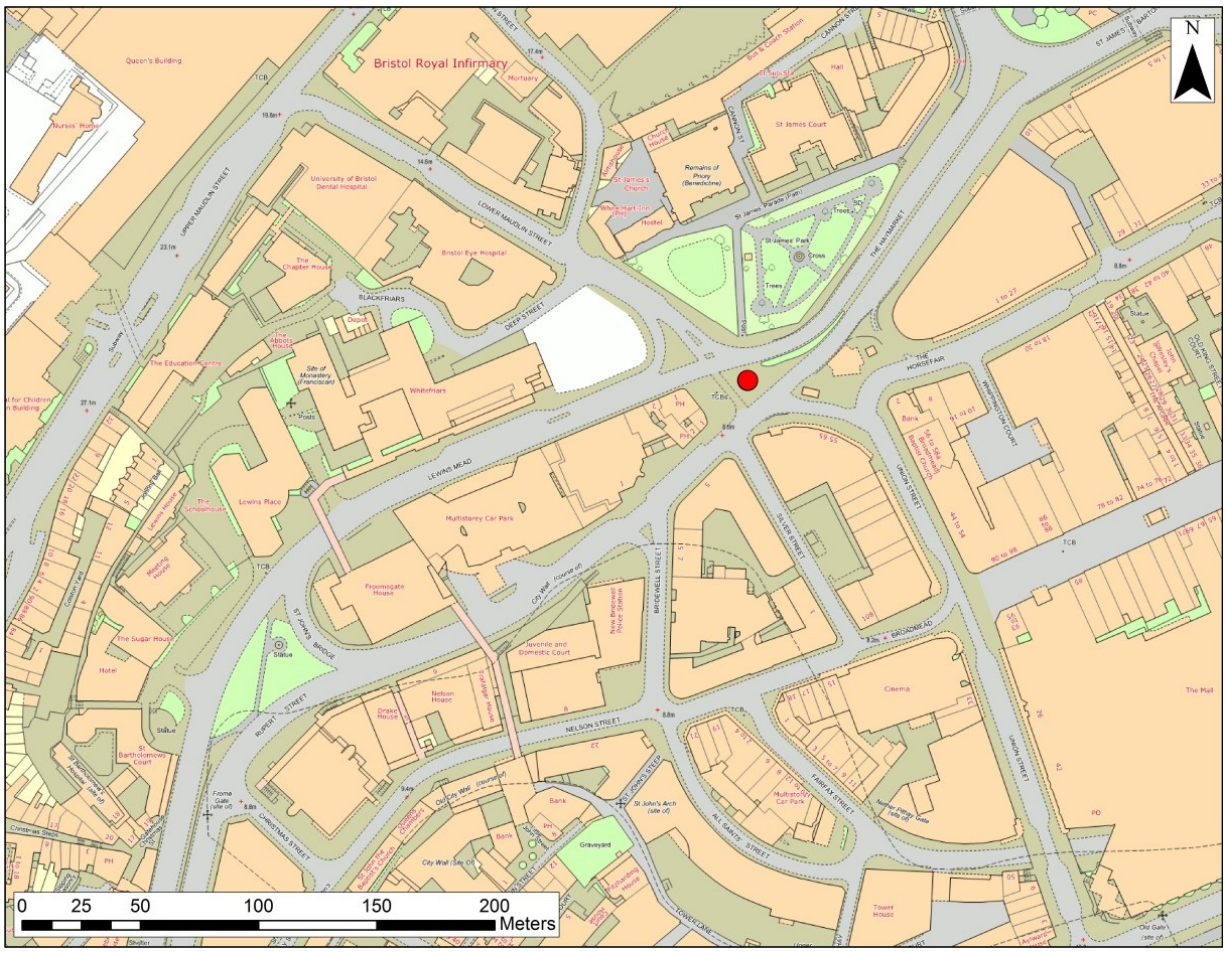


Fig. 2: Plan showing location of Pit 1 (enabling works) (Pit 1 marked in red)

The area is shown on historic mapping (Millerd 1673; Rocque 1742; Plumley & Ashmead 1828) within the bounds of the lay area of the churchyard, located slightly N of the SW corner. However, Ashmead's later map of 1855 shows the extent to which the area had been redeveloped. The eastern and southern parts had been redefined in the 1830s to create a hay and coal market that remained active until the 1860s, when a crossroads and tram intersection was established at the intersection of Lower Maudlin Street, Bond Street, Horsefair, Silver Street and the upper part of Union Street (as depicted on the OS 1st -edition map of 1886).

Both *in-situ* articulated skeletons and disarticulated remains (numbering over 550 burials at least) have been previously encountered in this area at depths varying from as little as 0.3m to 1.5m below existing ground level. These previous investigations have demonstrated the potential for intact burials of medieval date to survive, in spite of 19th -20th -century carriageway improvements and modern service installation.

Avon & Somerset Police and the city archaeologist were notified immediately upon discovery of human remains, these being revealed at a depth of approximately 1m below ground level in the NE corner of the pit. The remains were disarticulated and comprised a skull, several vertebrae and a radius and were likely to have been disturbed during 19th -20th -century service trenching and subsequently re-deposited in the associated backfill (111). The skeleton was removed and subsequently collected by BA.

The initial enabling works were not in the first instance subject to archaeological observation as the level of engineering impact was expected to be minimal. However, as these initial works failed to locate the main, further exploratory excavation was undertaken which extended the dimensions of the original investigation to 3.8m × 2.6m but which was halted immediately upon discovery of human remains.

No further remains or significant archaeology were encountered during the observation.

4.1 Results

A single pit (Pit 1) was excavated in the pedestrian area to the NE of The Bay Horse PH. During this excavation, human remains were uncovered and removed prior to archaeological recording.

Plate 1: View NE of Pit 1

4.1.1 Pit 1

Pit 1 was located in the pedestrian island on The Haymarket, to the NE of the Bay Horse PH (*Plates 1 & 2, figs. 3 & 4*). It measured 2.7m (NW/SE) × 2.6m (NE/SW) with a 1.2m (NE/SW) × 1.05m (NW/SE) extension added at the NW corner. The pit reached a depth of 1.35m below ground level with the extension being excavated to a depth of 2.3m before being backfilled.

LOCATION	CONTEXT	DESCRIPTION
ST 58916 73377 The Horsefair NE of The Bay Horse PH	(100)	Compact, concrete slabs; measured 0.4m × 0.4m × 0.06m; extended across pit at an average thickness of 0.06m. Overlies (101)
	INTERPRETATION:	*Paving slabs*
	(101)	Loose, dark greyish-yellow sand; no inclusions; extending pit-wide to an average thickness of 0.12m; encountered at depth of 0.06m. Underlies (100) Overlies (102)
	INTERPRETATION:	*Bedding layer*
	(102)	Loose, dark yellowish-brown small stones <5cm + sandy matrix; no inclusions; extending pit-wide to an average thickness of 0.26m; encountered at depth of 0.16m. Underlies (101) Overlies (103)
	INTERPRETATION:	*Levelling deposit*
	(103)	Indurated concrete; no inclusions; extending pit wide at an average thickness of 0.16m; encountered at depth of 0.42m. Underlies (102), (104) Overlies (105) (109) (111)
	INTERPRETATION:	*Sub-base for former road surface*
	(104)	Indurated tarmac; no inclusions; visibly extending 0.3m (NE/SW) × 0.25m (NW/SE) at an average thickness of 0.06m; encountered at depth of 0.36m. Underlies (102) Overlies (103)
	INTERPRETATION:	*Former road surface*
	(105)	Soft, mid-greyish-brown silty sand; moderate small stones <0.04m; visibly extending 2m (NE/SW) × 0.9m (NW/SE) at an average thickness of 0.06m; encountered at depth of 0.58m. Underlies (103) Overlies (106) Cut by [114] [115]
	INTERPRETATION:	*Made ground/levelling deposit*
	(106)	Soft, light brownish-grey slightly silty gritty sand; occ. small stones <0.03m; visibly extending 2m (NE/SW) × 0.9m (NW/SE) at an average thickness of 0.04m; encountered at depth of 0.64m. Underlies (105) Overlies (106) Cut by [114] [115]
	INTERPRETATION:	*Made ground/levelling deposit*
	(107)	Soft, mid-reddish brown and dark brown mottled silty sand; occ. charcoal flecks, oc. Mortar flecks, occ. bone fragments <0.03m, mod small stones

LOCATION	CONTEXT	DESCRIPTION
		<0.05m; visibly extending 2m (NE/SW) × 0.9m (NW/SE) at an average thickness of 0.2m; encountered at depth of 0.68m. Underlies (106) Overlies (107) Cut by [114] [115]
	INTERPRETATION:	*Made ground/levelling deposit*
	(108)	Soft, light grey and reddish brown mottled silty sand; freq. charcoal flecks, freq. mortar flecks, occ. small stones <0.0m; visibly extending 2m (NE/SW) × 0.9m (NW/SE) at an average thickness of 0.08m; encountered at depth of 0.88m. Underlies (107) Overlies (112) Cut by [114] [115]
	INTERPRETATION:	*Made ground/levelling deposit*
	(109)	Compact mid-greyish white concrete; no inclusions; visibly extending 1.2m (NW/SE) × 0.2m (NE/SW) × 0.08m (av. thickness); encountered at depth of 0.62m. Underlies (103) Overlies (110) Fill of [115]
	INTERPRETATION:	*Upper backfill of [115]*
	(110)	Soft, dark grey & black mottled sandy silt; occasional charcoal flecks & mortar flecks, frequent small-medium stones <25cm; visibly extending 1.2m (NW/SE) × 0.2m (NE/SW) × 0.22m (av. thickness); encountered at depth of 0.8m. Underlies (109) Overlies (116) Fill of [115]
	INTERPRETATION:	*Backfill of [115]*
	(111)	Soft, dark greyish-brown & black mottled sandy silt; frequent small-medium stones <20cm, occasional charcoal flecks; visibly extending 0.75m (NE/SW) × 0.7m (NW/SE) × 0.62m (av. thickness); encountered at depth of 0.58m. Underlies (103) Overlies (113) Fill of [114]
	INTERPRETATION:	*Upper backfill of [114]*
	(112)	Soft, mid reddish-orange & mid-grey mottled slightly silty sand; moderate small-medium sandstone fragments <0.2m; visibly extending 2m (NE/SW) × 1.2m (NW/SE) × 0.6m (av. thickness); encountered at depth of 0.92m. Underlies (108) Overlies (117) Cut by [114] [115]
	INTERPRETATION:	*Re-deposited (117) forming made ground deposit*
	(113)	Compact, pennant sandstone; un-mortared; occasional tarmac; visibly extending 0.75m (NE/SW) × 0.70m (NW/SE) × 1m (visible depth); encountered at depth of 0.58m. Underlies (111) Fill of [114]
	INTERPRETATION:	*Stony lower backfill of [114]*
	[114]	Cut; linear; oriented NW/SE; visibly extending 0.75m (NE/SW) × 0.7m (NW/SE) to a depth of

LOCATION	CONTEXT	DESCRIPTION
		1m; ; encountered at depth of 0.58m; break of slope (top) sharp, sides steep, break of slope (base) not visible; base not visible. Cuts (105) (106) (107) (108) (112) (117) Filled by (111) (113)
	INTERPRETATION:	*Service trench*
	[115]	Cut; linear; oriented NNW/SSE; visibly extending 1.5m (NW/SE) × 1.2m (NE/SW) to a depth of 1.3m; encountered at depth of 0.58m; break of slope (top) sharp, sides moderate, break of slope (base) not visible, base not visible. Cuts (105) (106) (107) (108) (112) (117) Filled by (109) (110) (116)
	INTERPRETATION:	*Service trench*
	(116)	Compact, pennant sandstone; un-mortared; occasional tarmac; visibly extending 1.05m (NE/SW) × 0.8m (NW/SE) × 1.3m (visible depth); encountered at depth of 1.06m. Underlies (110) Fill of [115]
	INTERPRETATION:	*Stony lower backfill of [115]*
	(117)	Firm, mid reddish-orange sand; frequent small-medium sandstone <0.35m; visibly extending 2m (NE/SW) × 0.9m (NW/SE) × 0.35m (av. thickness); encountered at depth of 1.5m. Underlies (112)
	INTERPRETATION:	*Natural substrate*

4.1.2 Discussion

Much of Pit 1 had been excavated prior to BA's attendance on site for the reasons given above and was recorded after the removal of the skeletal remains by Avon & Somerset Police.

Removal of concrete sub-base (103) underlying a former road surface revealed a series of shallow made-ground or dump deposits - (105) (106) (107) (108) & (112) - all of which had been truncated by service cuts [114] (at the NE corner of the pit (presumed to be on a NNW/SSE alignment) and [115] (running NNW/SSE along the length of the pit). However, the majority of this cut had been exposed and then re-covered prior to the archaeological recording and so was only visible in the NW corner of the pit.

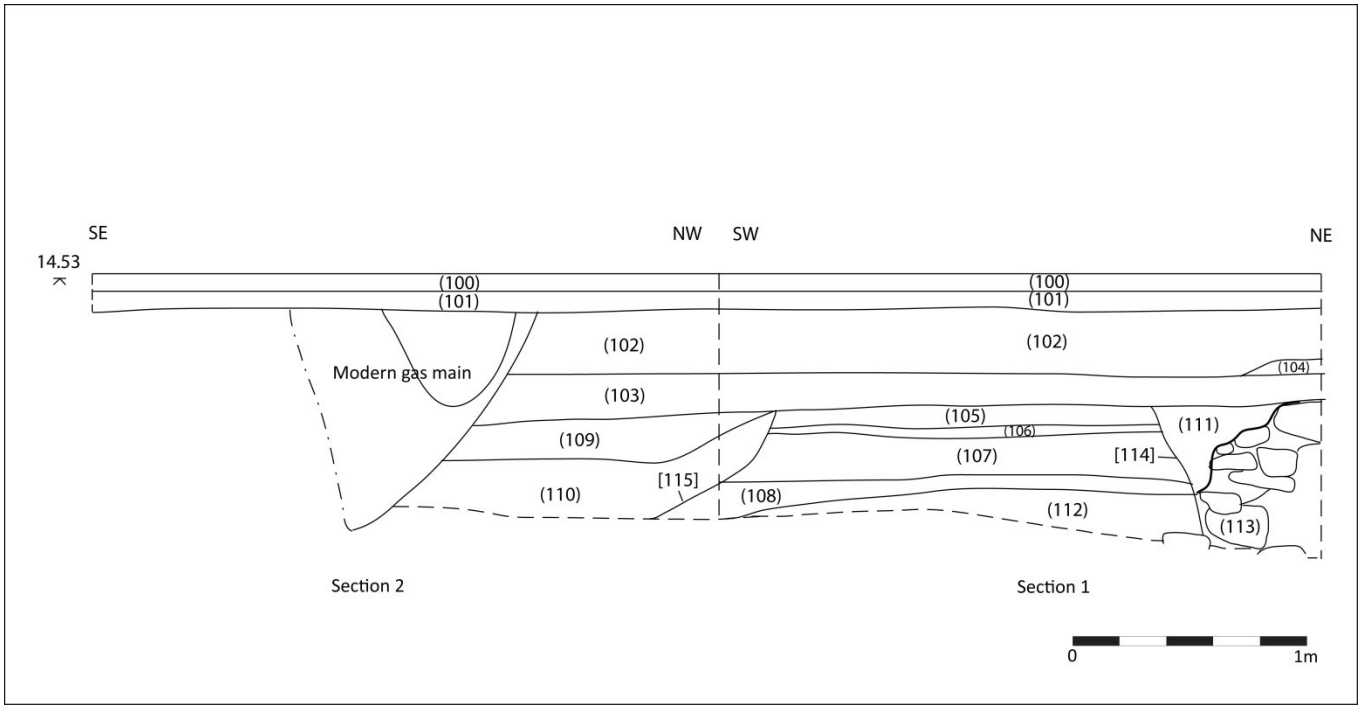


Fig. 3: NE- and SE-facing sections (Sections 1 & 2) of Pit 1

Plate 2: View NW of sandstone backfill (113) and the slot excavated by Somerset & Avon Police

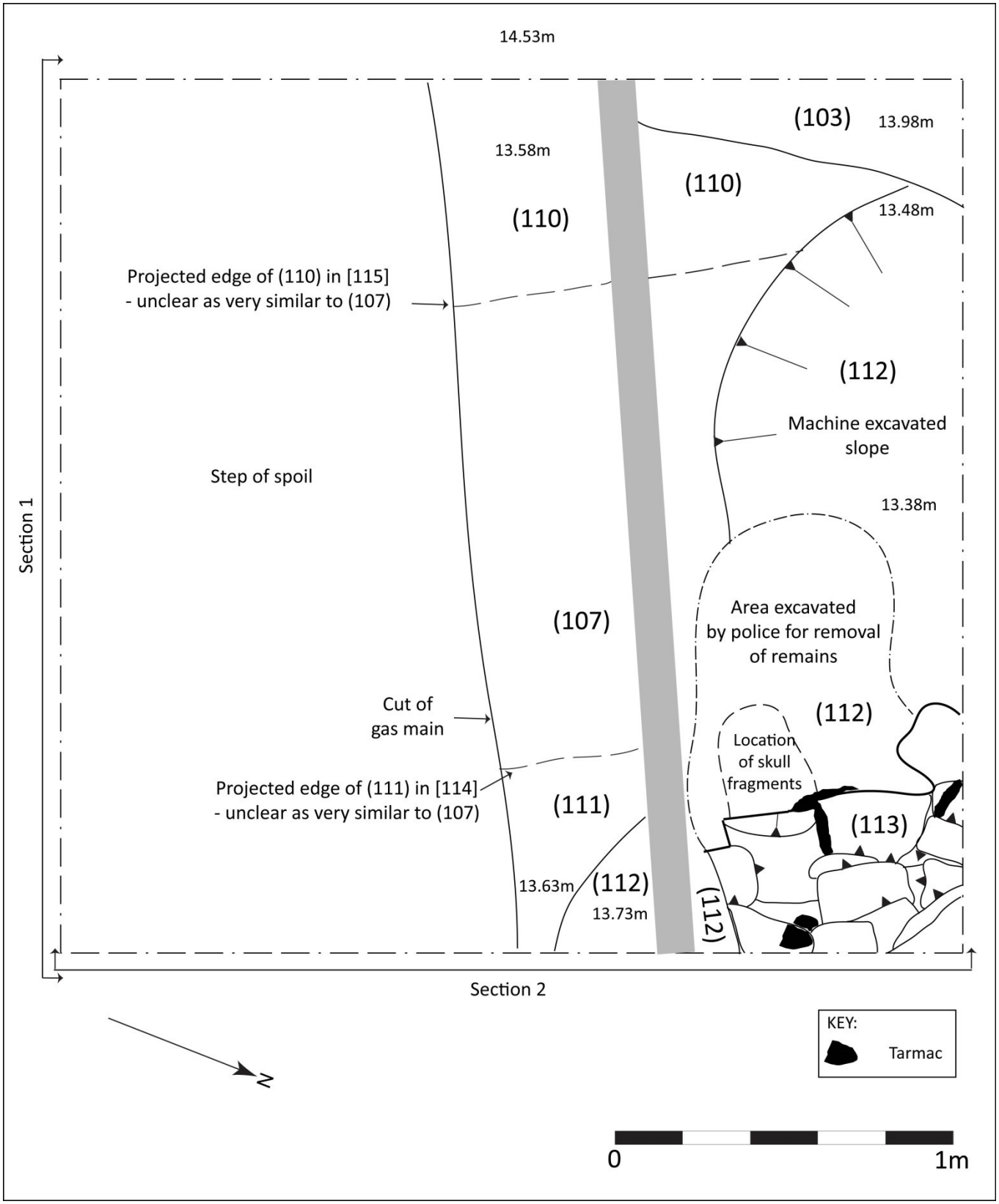


Fig. 4: Plan of Pit 1 showing (113) and slot excavated by Somerset & Avon Police

The upper backfill of [114] was composed of dark greyish-brown and black mottled sandy silt with occasional charcoal inclusions and disarticulated human remains (111), which represented mixed and re-deposited material derived from the made ground/dump layers. This sealed (113), a backfill of loose un-mortared medium-to-large pennant sandstone with occasional small areas of tarmac (*fig. 3*). This deposit was of the same material as (116) in [115] and sealed a main, present at a depth of 1.6m below ground level.

The upper backfill of [115] consisted of mid-greyish white concrete (109), which was probably used as a levelling deposit prior to the laying of (103) and (104). This sealed a dark grey and black mottled sandy silt with occasional charcoal and mortar inclusions (110). This deposit was very similar to (111) in [114] and was also formed from the mixed and re-deposited made-ground/dump layers mentioned above. Underlying this was (116) of the same composition as (113) which sealed a main, present at a depth of 1.7m below ground level. Underlying this main was the water main at a depth of 2m below ground level. This main was also butted by the stony backfill (116), although it is likely that it is unrelated to the later main and was revealed during the excavation of the service cut [115] and subsequently sealed in part by (116).

It should be noted that the section of Pit 1 containing deposit (116) was revealed in a later trial hole excavated at the corner of the pit to locate the water main and was not visible during initial recording. As the hole was 2m deep and generally unstable, there was no possibility of re-entering the Pit 1 to carry out further recording.

Plate 3: Extension of pit

The two stony backfill deposits (113) and (116) were an unusual choice of backfill material and it appears that they are present only in a small section of these cuts. Although [114] appeared only in the NE corner of the pit, [115] was visible throughout its entire length and this material was observed only in the NW corner. Additionally, [115] and the associated main were encountered previously to the NE of Bristol Eye Hospital on Lower Maudlin Street but no evidence of this stone backfill material was identified. It would thus appear likely that both (113) and (116) are contained within a limited area and are probably structural in origin, the original structure having been truncated during service trenching, with some of the masonry becoming incorporated into the backfill.

The historic map evidence offers no indication of a structure in this area that may have been impacted by service trenches [114] and [115]. The location of Pit 1 is approximately 15m N of the line of the southern churchyard boundary and, although it shares a roughly E/W alignment with the stony areas observed within the service cuts, it would appear unlikely that (113) and (116) represent the original boundary wall. However, a block of seven tenements first depicted in 1673 and which survived until *c*.1828 represent limited encroachment into the SW corner of the churchyard and it is possible that this backfill material relates to the demolition of these tenements at some point between 1828, when they are shown on Ashmead's plan as fronting onto Silver Street, and publication of his later map of1855, which shows this area had been cleared by the middle of the century.

4.1.3 Conclusion

The discovery of human remains during enabling works at the Bay Horse PH supports the findings of previous investigations carried out within the former grounds and churchyard of St. James' Priory. All of these investigations, with the exception of a watching brief carried out in 2006 (Heaton 2006), produced evidence of human remains comprising both *in-situ* burials and disarticulated skeletal material.

Historic map evidence extending from Millerd's plan of 1673 up to the publication of Ashmead's 1828 map clearly shows the boundaries of the Priory and churchyard (prior to its subsequent reduction to create a hay and coal market in the 1830s). This boundary is defined by Silver Street to the W, St James's Parade to the N, Horsefair to the S and by a lane formerly known as 'St James's Churchyard' to the E (no longer in existence).

5 Principal phase of engineering groundworks

The main phase of work commenced in June 2013 and continued on an intermittent basis until November 2014 (*fig. 5*). Results are set out in tabular format, with any significant findings being subject to full and detailed discussion.

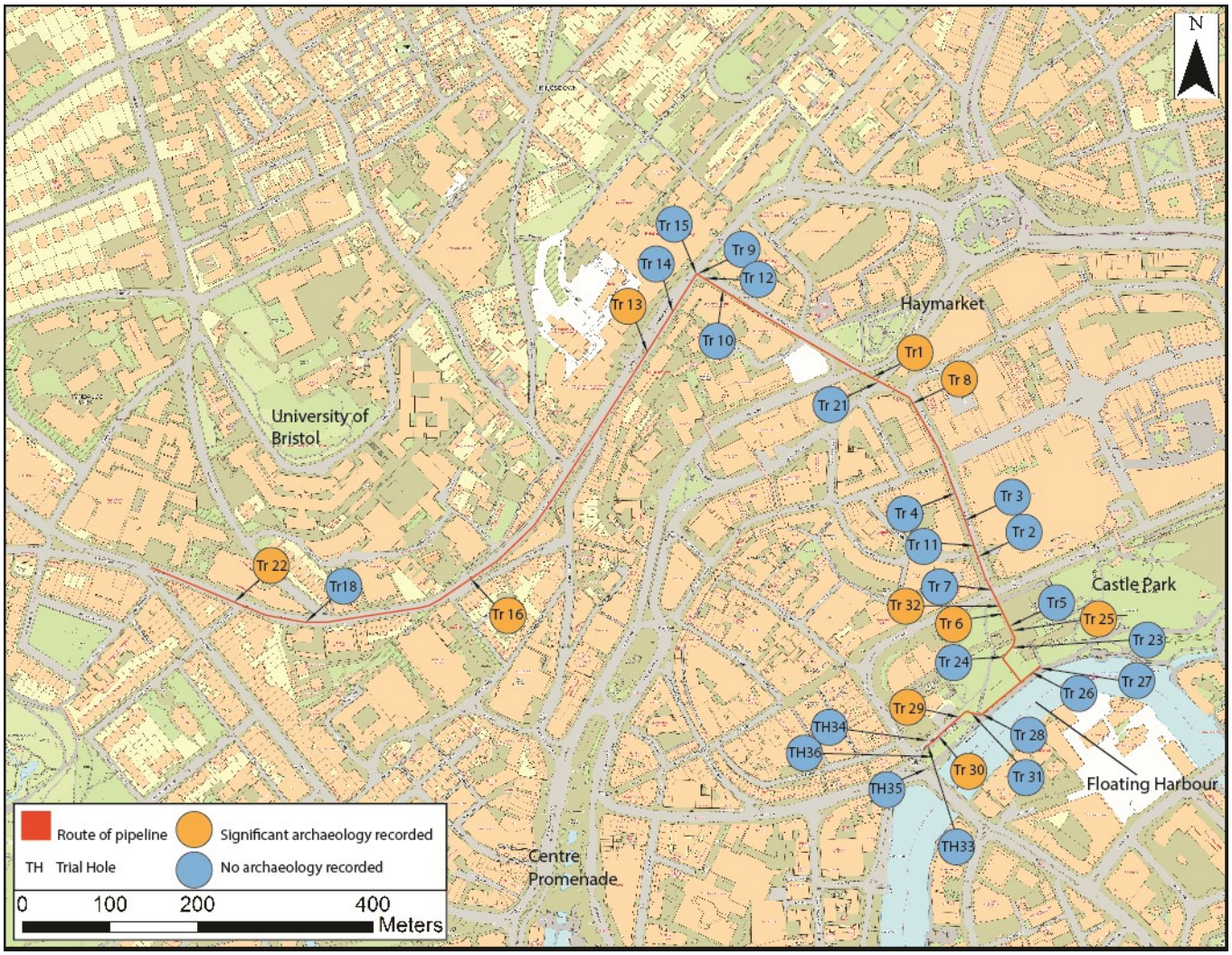


Fig. 5: Plan showing location trenching

5.1 Trench 1

Plate 4: View to the SW of Trench 1

This area (*Plate 4*) had been previously opened on April 26th 2013 (Pit 1 - see Enabling Works above) and an inhumation burial revealed. Somerset & Avon Police attended the scene and removed the remains for analysis, following which the area was backfilled. This section of the existing main was then reopened and extended on June 26th 2013 and a second inhumation (118) was revealed on the opposite side of the water main. Pit 1 was then re-designated as Trench 1 which initially measured 2.35m (NW/SE) × 1.40m (NE/SW) and reached a maximum depth of 1.7m. It was later extended to the SE to connect with Trench 21; the extension measured 2m (NE-SE) × 0.5m (NW/SE), with a maximum depth of 1.45m. Previously recorded deposits were identified and these context descriptions are not replicated in the following table, which commences with a detailed description of burial (118).

LOCATION	CONTEXT	DESCRIPTION
See preceding section for previous context record details		
NGR: ST 58920 73374 Paved area on The Haymarket opposite The Bay Horse PH along the route of the C19 main	(118)	Inhumation; supine; aligned E/W; partial survival of R & L feet due to truncation by the C19 service trench [134]. Fill of [120], overlain by (122).
	INTERPRETATION	*Inhumation*
	(119)	Inhumation; supine; aligned E/W; encountered at 1.65m below ground level; skull and upper torso truncated by the C19 service trench [134]; continued into the baulk to the E. Fill of [121], overlain by (123).
	INTERPRETATION:	*Inhumation*

LOCATION	CONTEXT	DESCRIPTION
	[120]	Cut; aligned E/W; not visible. Cuts (117), filled by (118) (122)
	INTERPRETATION:	*Grave cut*
	[121]	Cut; aligned E/W; not visible. Cuts (117), filled by (119) (123)
	INTERPRETATION:	*Grave cut*
	(122)	Firm, mid brownish-red sand; occasional small stones < 0.06m; very diffuse horizon with cemetery soil (112). Underlies (112), fill of [120]
	INTERPRETATION:	*Backfill of grave cut*
	(123)	Firm, mid brownish-red sand; occasional small stones <0.06m; very diffuse horizon with cemetery soil (112). Fill of [121], underlies (112)
	INTERPRETATION:	*Backfill of grave cut*
	(124)	Inhumation; supine; aligned E/W; encountered at 1.58m below ground level; continued into baulk to E. Fill of [127], overlain by (128)
	INTERPRETATION:	*Inhumation*
	(125)	Inhumation; supine; aligned E/W; encountered 1.56m below ground level; partial survival of lower legs and feet due to truncation by C19 service trench [134]. Fill of [129], overlain by (130)
	INTERPRETATION:	*Inhumation*
	(126)	Inhumation; supine; aligned E/W; encountered 1.62m below ground level; partial survival of the upper torso; Truncated by grave cuts [129] [127]. Fill of [131]
	INTERPRETATION:	*Inhumation*
	[127]	Cut; aligned E/W; not visible. Cuts (132), filled by (124) (128)
	INTERPRETATION:	*Grave cut*
	(128)	Firm, mid brownish-red sand; occasional stone inclusions < 0.06m; very diffuse horizon with cemetery soil (112). Fill of [127], underlies (112)
	INTERPRETATION:	*Backfill of grave cut*
	[129]	Cut; aligned E/W; not visible. Cuts (132), filled by (125) (130)
	INTERPRETATION:	*Grave cut*

LOCATION	CONTEXT	DESCRIPTION
	(130)	Firm, mid brownish-red sand; occasional stone inclusions < 0.06m; very diffuse horizon with cemetery soil (112). Underlies (112), fill of [129]
	INTERPRETATION:	*Backfill of grave cut*
	[131]	Cut; aligned E/W; not visible. Cuts (117), filled by (126) (132)
	INTERPRETATION:	*Grave cut*
	(132)	Firm, mid brownish-red sand; occasional stone inclusions < 0.06m; very diffuse horizon with cemetery soil (112). Cut by [127] [129], fill of [131]
	INTERPRETATION:	*Backfill of grave cut*
	[133]	Cut; sub circular in plan; extended 0.48m (NW/SE) × >0.5m (NE/SW) × 0.5m; encountered at 0.91m below ground level; break of slope top and base sharp, sides steeply sloping, base flat. Cuts (112), filled by (137)
	INTERPRETATION:	*Post-medieval rubbish pit*
	[134]	Cut; linear in plan; extended 2.5m (NE/SW) × 4.7m (NW/SE) × 0.8m; encountered at 0.9m below ground level; break of slope top sharp, sides vertical; base not visible. Cuts (112), filled by (135)
	INTERPRETATION:	*C19 service trench*
	(135)	Soft, dark greyish-brown silt; frequent large stones <0.40m; occasional mixed rubble. Fill of [134] Cut by [133], overlain by (108)
	INTERPRETATION:	*Backfill of service trench*
	(136)	Loose, dark greyish-brown silt; frequent fragmentary human bone. Overlies (119). Underlies (123)
	INTERPRETATION:	*Disarticulated human remains & charnel overlying inhumation (119)*
	(137)	Friable, black sandy silt; moderate mortar flecks, frequent oyster shell, frequent charcoal flecks, occasional CBM, moderate sub-angular stones; extended 0.48m (NW/SE) × 0.5m (NE/SW) × 0.5m; encountered at 0.91m below ground level. Fill of [133], underlies (116)
	INTERPRETATION:	*Fill of pit [133]*

LOCATION	CONTEXT	DESCRIPTION
NOTE: A further inhumation was revealed in the NW corner of the trench during the initial phase of excavation and these remains were removed by the police. All burials were associated with the medieval cemetery of St. James Church.		

5.1.1 Discussion

The cemetery soil (112) comprised re-deposited natural geology resulting from grave-digging and subsequent burial activity (*Plates 5-9, fig. 6*). No clear horizon could be identified between the natural geology (117) and the grave backfills (132) (125) (130) (123) (124) and grave cuts were thus obscured. However, all inhumations were assigned cut and backfill numbers whilst disarticulated human bone & charnel was assigned to the cemetery soil horizon, as it was not possible to distinguish whether any of this material related specifically to any grave backfill deposit.

Plate 5: View of skeleton (124)

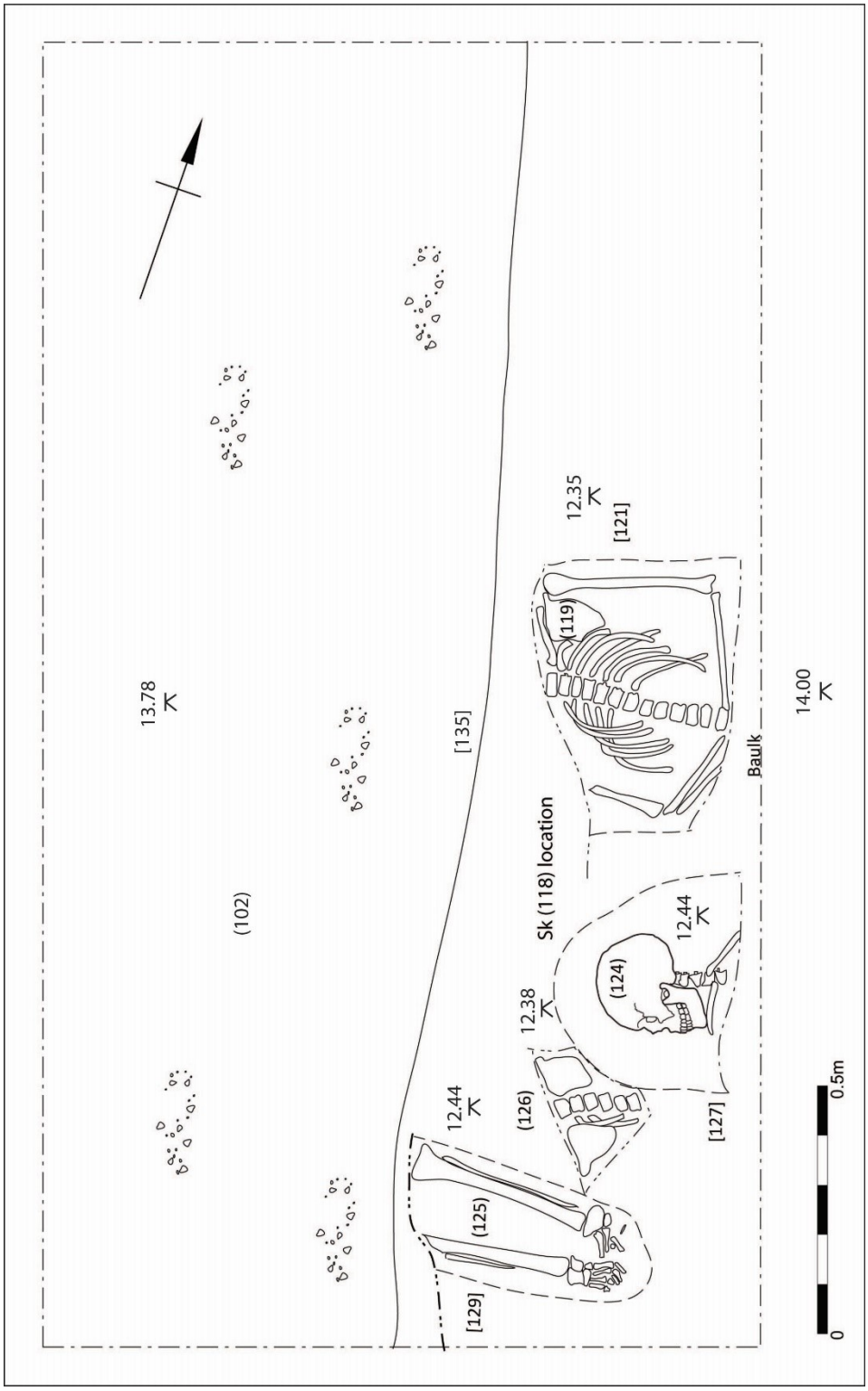


Fig. 6: Plan showing location of burials revealed within Trench 1

Plate 6: View to the E of skeleton (124) shown within trench section

Plate 7: View to the E showing skeleton (119)

Plate 8: View to the SE showing charnel deposit (136)

The 19th -century service trench [134] crossed the trench on a NW/SE alignment truncating the cemetery soil horizon (112) and inhumations (125) (118) and (119) (see Appendix 1).

E/W aligned skeleton (126) (*Plate 9*) within grave cut [131] represented the remains of an adult and appeared to be one of the earliest inhumations within this burial group, as it has been truncated by grave cuts [127] and [129]. The skeletal pathologies and overall stature of the individuals within the burial assemblage as a whole suggested this may have been a relatively high-status group (see Appendix 1).

The group included two young males aged between 25-35 years and three other individuals that could not be aged or sexed. The disarticulated material (136) (*Plate 8*) is considered to represent a single individual that could not be aged or sexed, an older woman and a younger sub-adult aged between 16-23 years at death (see Appendix 1).

Plate 9: View to the E of skeleton (126)

Subsequent extension of the trench resulted in the recovery of human bone from the section within the cemetery soil horizon (112). As only a small quantity of material was found, it was not possible to determine whether the bone related to a further inhumation or was disarticulated (see Appendix 1).

Pit [133] was potentially associated with properties on Silver Street following redevelopment of the area affecting the SW corner of St. James cemetery.

5.2 Trench 2

Trench 2 (*Plate 10*) was located on Union Street, S of the bridge crossing Fairfax Street, and was excavated to determine the location of the main. It was backfilled and later re-excavated and incorporated into the northern end of Trench 7. The trench measured 5m (N/S) × 2m (E/W) × 0.75m.

LOCATION	**CONTEXT**	**DESCRIPTION**
NGR: ST 59044 73173 Union Street along the route of the C19 main, located immediately S of bridge crossing Fairfax Street	(200)	Soft light yellow sand; measured 0.03m thickness
	INTERPRETATION:	*Bedding layer*
	(201)	Compact light greyish-to-black silty sand; moderate inclusions of rubble - brick fragments, sparse glazed pottery fragments; extended to base of trench at 0.75m.
	INTERPRETATION:	*Backfill deposit*
RESULTS: No significant archaeology		

Plate 10: View N showing Trench 2 and exposed 19th -century main

5.3 Trench 3

Trench 3 (*Plate 11*) initially measured 3.14m (N/S) × 2.2m (E/W) × 1.4m but was extended by 3m to locate a valve and was incorporated into the northern end of Trench 11. The trench was subsequently extended by a further 6m to the N due to the high frequency of modern services intersecting the trench.

LOCATION	**CONTEXT**	**DESCRIPTION**
NGR: ST 59033 73210 Union Street along the route of the C19 main, located 3.25m from the western footpath opposite the 'Woolworths' store	(300)	Indurated tarmac. Overlies (301)
	INTERPRETATION:	*Modern tarmac road surface*
	(301)	Compact dark grey hard-core to a depth of 0.23m. Underlies (300)
	INTERPRETATION:	*Associated hard-core bedding layer*
	(302)	Masonry; square in plan; brick construction; measured 1m × 1m × 0.75m; encountered at a depth of 0.41m. Fills [303]
	INTERPRETATION:	*Brick-built access chamber associated with water main within construction cut [303]*
	[303]	Cut; square; measured 1m × 1m × 0.75m; encountered at 0.41m below ground level. Cuts (304), filled by (302)
	INTERPRETATION:	*Construction cut for brick structure (302)*
	(304)	Soft mid brown sandy silt; frequent brick & cement rubble encountered at a depth of 0.41m; average thickness 0.36m, 0.96m depth. Abuts (302)
	INTERPRETATION:	*Levelling layer associated with backfill of modern service cuts*
	(305)	Soft light brownish-yellow sand; 0.23m average thickness. Underlies (304), overlies (306)
	INTERPRETATION:	*Levelling layer*
	(306)	Soft mid reddish-brown silt; frequent brick & cement rubble (similar to (402) in Trench 4); average thickness 0.43m; trench-wide to base of excavation. Underlies (305)
	INTERPRETATION:	*Made-ground layer associated with the backfill of the C19 water main*
RESULTS: No significant archaeology		

Plate 11: View N showing exposed 19th -century water main in Trench 3

5.4 Trench 4

Trench 4 (*Plates 12 & 13*) measured 3m (N/S) × 1.80m (E/W) × 1.22m.

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 59017 73256 Located on Union Street following the route of the C19 main situated 2.8m from the entrance to the Odeon cinema	(400)	Indurated tarmac; extended trench-wide, maximum depth of 0.24m. Overlies (401)
	INTERPRETATION:	*Modern tarmac road surface of the (400)*
	(401)	Indurated light grey concrete; extended trench-wide, maximum depth of 0.44m. Underlies (400), overlies (402)
	INTERPRETATION:	*Associated bedding layer (401)*
	(402)	Soft mid reddish-brown sandy silt; frequent fragmented brick & concrete rubble. Extended trench-wide, maximum thickness 0.77m to the limit of excavation. Underlies (401).
	INTERPRETATION:	*Made-ground deposit - similar to (306) in Trench 3 and encountered, although (306) was encountered at a depth of 0.97m with an average thickness of 0.43m. The variation in depth and thickness is due to subsequent services truncating trench 3 disturbing the original made-ground deposit overlying the C19 main.*
RESULTS: No significant archaeology: **the stratigraphic profile showed a continuation of the modern made-ground deposits visible in Trench 3**		

Plate 12: View W of Trench 4

Plate 13: View to the SW of Trench 4

5.5 Trench 5

Trench 5 (*Plates 14 & 15*) measured 3.30m (N/S) × 3.50m (E/W) with a maximum of depth 2.0m.

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 59093 73097 Located in the grassed area of Castle Park to NW of St. Peter's Church, 5m S of trench 6	(500)	Indurated concrete surface; extended 3.5m (N/S) × 0.35m (E/W) on the E edge of the trench, with a maximum thickness of 0.06m. Overlies (501)
	INTERPRETATION: (501)	*Modern paving surface* Indurated light grey concrete; extended extending 3.5m (N/S) × 0.35m (E/W) on the E edge of the trench, with a maximum thickness of 0.09m. Underlies (500), overlies (502)
	INTERPRETATION: (502)	*Associated bedding layer* Soft mid-reddish-brown silt; moderate fragmented brick; extended trench-wide, maximum thickness 0.33m. Underlies (501), overlies (503)
	INTERPRETATION: (503)	*Levelling layer associated with the 1978 landscaping of Castle Park* Indurated light grey concrete surface; encountered at a depth of 0.47m; extended trench-wide, maximum thickness of 0.22m. Underlies (502), overlies (504), same as (603)
	INTERPRETATION: (504)	*Former road or car park surface* Soft mid reddish-brown silt; frequent brick rubble; encountered at a depth of 0.69m; extended trench-wide, maximum thickness of 0.71m to the limit of excavation. Underlies (503)
	INTERPRETATION:	*Made-ground layer associated with the backfill of the C19 service trench.*
RESULTS: No significant archaeology		

Plate 14: View N of Trench 5

Plate 15: View N of the former concrete surface (503)

5.6 Trench 6

Trench 6 (*Plates 16-18; fig.7*) measured 3.5m (N/S) × 2.8m (E/W) × 1.35m. The trench was bisected by two large services, the 19th century water main trench and a 20th century gas main, both running N/S.

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 59087 73107 Grassed area of Castle Park to NW of St. Peter's Church, 5m N of Trench 5.	(600)	Indurated concrete surface; measured 0.06m thick. Overlies (601)
	INTERPRETATION:	*Modern paving surface*
	(601)	Indurated light grey concrete; extended to a depth of 0.22m, average thickness 0.16m. Underlies (600), overlies (602)
	INTERPRETATION:	*Associated bedding layer*
	(602)	Soft mid reddish-brown silt; moderate fragmented brick; measured 0.04m average thickness. Underlies (601), overlies (603), same as (502)
	INTERPRETATION:	*Levelling layer associated with the landscaping of Castle Park in 1978*
	(603)	Indurated light grey concrete surface; encountered at a depth of 0.47m; average thickness 0.23m. Underlies (602), overlies (604), same as (503)
	INTERPRETATION:	*Location suggests possible former road surface of Dolphin Street. Deposit encountered in Trench 6 at the shallower depth of 0.22m.*
	(604)	Soft dark reddish-brown silt; moderate brick rubble; encountered at a depth of 0.46m; average thickness 0.9m to base of excavation. Underlies (603), abuts (605)
	INTERPRETATION:	*Made ground deposit associated with the backfill of the service trenches*
	(605)	Masonry; linear in plan; brick construction; 7 courses surviving; size of materials: 230mm×110mm×70mm, cement bonding, English bond; measured 1.19m (N/S) × 0.57m deep (width & further dimensions unknown as wall located on E section of trench). Abutted by (604)
		Partial remains of cellarage (605)
RESULTS: Masonry remains revealed (discussed below)		

5.6.1 Discussion

Trench 6 revealed a wall (605) (*Plate 17*) located in the E section of the trench which appeared to form part of a cellar structure beneath a property on the E side of Dolphin Street, possibly 4-5 Dolphin Street, which was at that time occupied by 'Frederick H. Barton Outfitters'.

Plate 16: View to the E of Trench 6

The bricks comprising (605) were stamped 'Malago Colliery & Brickworks' (*Plate 18*). The Malago Vale Brickworks were located in Bedminster S Bristol and were active from the 1850s to 1897-1902. The wall possibly represents the lower coursing of cellarage on the eastern extent of Dolphin Street.

Plate 17: View to the E of the W-facing elevation of wall (605)

Plate 18: Example of brick produced by the Malago Vale Brickworks

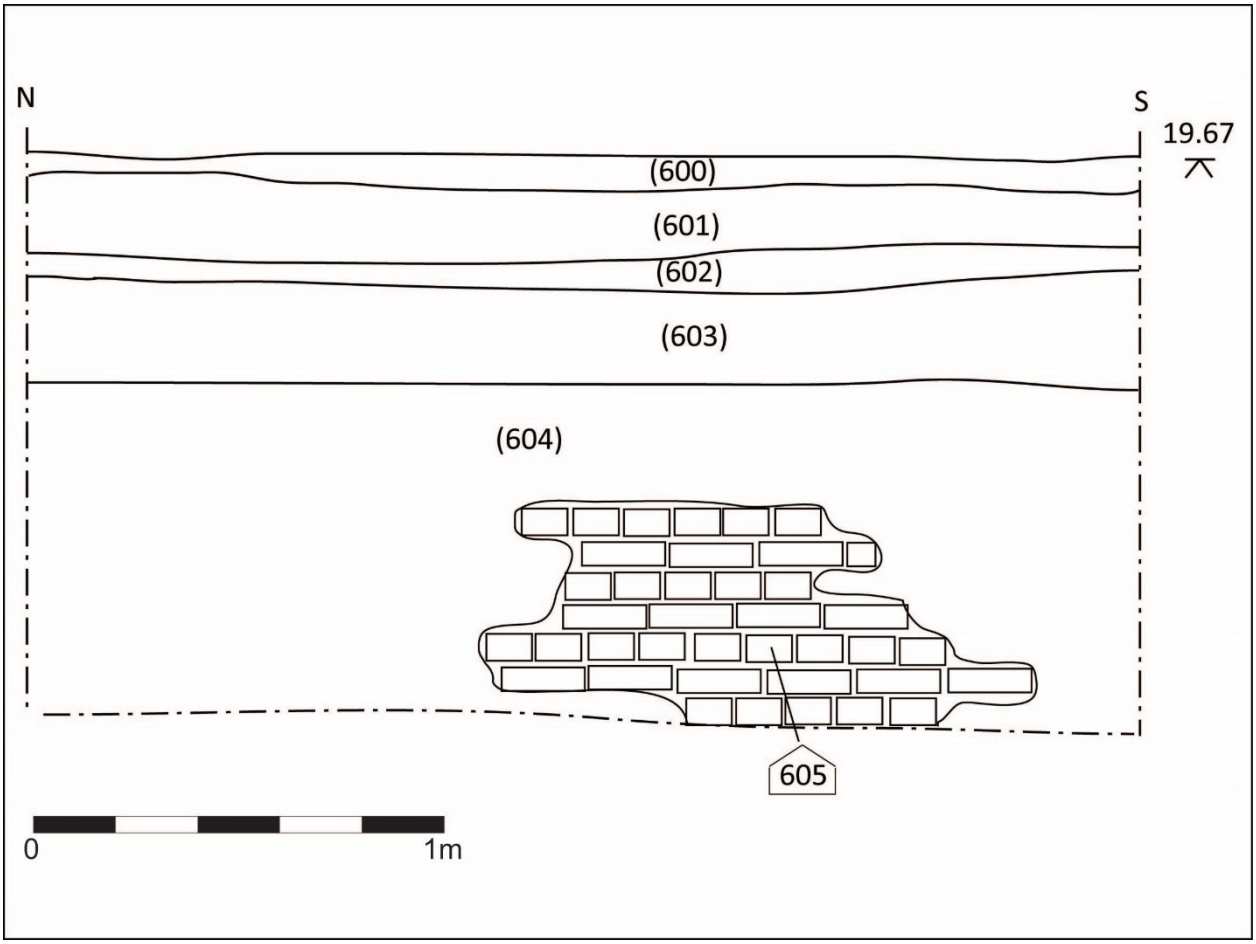


Fig. 7: W-facing elevation showing possible cellar wall (605)

5.7 Trench 7

Plate 19: View to the N of Trench 7

Trench 7 (*Plates 19 & 20*) measured 32m (N/S) × 1.8m (E/W) × 1.15m (maximum depth) and incorporated Trench 2 at its northern extent.

LOCATION	**CONTEXT**	**DESCRIPTION**
NGR: ST 59059 73136 S extent of Union Street below junction with Wine Street.	(700)	Indurated tarmac surface; measured 0.18m thick. Overlies (701)
	INTERPRETATION:	*Modern paving surface*
	(701)	Indurated light grey concrete; extended to a depth of 0.38m. Underlies (700), overlies (702)
	INTERPRETATION:	*Associated bedding layer*
	(702)	Soft mid reddish-brown silt; moderate fragmented brick, 2 × clay pipe bowls; measured 0.77m average thickness. Underlies (701), overlies (703)

LOCATION		CONTEXT	DESCRIPTION
		INTERPRETATION:	*Levelling layer*
		(703)	Loose dark brown-to-black silt; abundant oyster shell & moderate charcoal flecks; extended 1.03m (N/S) × 0.21m (E/W) × 0.69m (depth to limit of excavation). Underlies (702)
		INTERPRETATION:	*Post-medieval dump of domestic waste. The deposit did not overlie the water main & thus predates the C19 service trench cut*
RESULTS: No significant archaeology, although two dateable clay pipe bowls were recovered from (702)			

Plate 20: View to the W showing deposit (703) in the E-facing section, which would appear to represent a dump of probable domestic waste evidently predating the installation of the 19th -century water main

5.7.1 Discussion

Two complete spur pipe bowls were recovered from (702), one of which, a fairly poorly-made example, dates from *c*. 1690-1720 (see Appendix 3). The second, more neatly-made bowl probably dates from *c*. 1740-80 (see Appendix 3). Both bowls are typical Bristol-style products and had just over 3cm of surviving stem, suggesting that the ground had not been extensively disturbed since they were originally deposited.

5.8 Trench 8

Plate 21: View to the N of Trench 8

The trench (*Plates 21-25; figs.8-12*) measured 51.60m (NW/SE) × 1m (NE/SW) but was widened at the NW extent to 4.5m (NE/SW) to facilitate a valve replacement, the maximum depth being 1.18m. The trenching represented a rerouting of the water main reconditioning pipe as its location beneath an existing footway prevented access to the 19th century main, which truncated the trench only at its NW and SE extent. However, 18 modern services were found to truncate the trench, most of which ran on a N/S alignment (*fig. 8*).

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 58969 73355 N extent of Union Street terminating at the junction with The Haymarket	(800)	Indurated, dark grey tarmac; extended trench-wide; average thickness 0.31m. Overlies (801)
	INTERPRETATION:	*Tarmac surface*
	(801)	Indurated, light grey concrete; extended trench-wide; encountered at 0.31m below ground level; average thickness 0.19m. Underlies (800), overlies (802) (808) (805) (811)
	INTERPRETATION:	*Associated bedding layer*

LOCATION	CONTEXT	DESCRIPTION
	(802)	Soft, dark grey brown silt; moderate brick fragments, occasional fragmentary animal bone & pottery; encountered at 0.41m below ground level; average thickness 0.31m. Underlies (801), overlies (803) (813) (814)
	INTERPRETATION:	*Made-ground deposit*
	(803)	Soft, dark greyish-black silt; frequent fragmentary charcoal fragments, pottery & clay pipe, animal bone; visible at the S end of trench; average thickness 0.09; encountered 0.68m below ground level. Underlies (802), overlies (815)
	INTERPRETATION:	*Dump deposit of charcoal-rich waste material*
	(804)	Soft, mid reddish-brown clay; moderate small stones <0.11m; trench-wide, at 1.22m below ground level; average thickness 0.14m to limit of excavation. Cut by [806] [809] [810] [812], underlies (813) (814)
	INTERPRETATION:	*Natural geology*
	(805)	Masonry; linear in plan; brick construction, 5 courses, cement bonding; extended 8.06m (N/S) × 0.44m (E/W) × 0.75m along the S end of trench; encountered at 0.65m below ground level. Fill of [806] underlies (815)
	INTERPRETATION:	*Possible post-medieval cellar wall*
	[806]	Cut; linear in plan; measured 8.06m (N/S) × 0.44m (E/W) × 0.75m. Cuts (804), filled by (805)
	INTERPRETATION:	*Construction cut for wall (805); cut not visible*
	(807)	Masonry; linear in plan; constructed from light grey rough-hewn stones, 2 courses; extended 1.55m (NW/SE); visible only on the SW edge of the trench. Fill of [809], overlain by (815)
	INTERPRETATION:	*Post-medieval wall*
	(808)	Masonry; linear in plan; rough-hewn stone & brick; extended 2.5m (E/W) × 0.6m (N/S); truncated by C19 service trench. Fill of [810], underlies (801)
	INTERPRETATION:	*Post-medieval culvert*
	[809]	Cut; linear in plan; aligned NW/SE; extent unknown. Cuts (804), filled by (807)

LOCATION	CONTEXT	DESCRIPTION
	INTERPRETATION:	*Construction cut for wall (807). Cut not visible*
	[810]	Cut; linear in plan; extended 2.5m (E/W) × 0.6m (N/S); truncated by C19 service trench; base not excavated. Cuts (804), filled by (808)
	INTERPRETATION:	*Construction cut for culvert (808)*
	(811)	Masonry; linear in plan; brick construction; size of materials: 0.07m × 0.14m × 0.09m; 7 courses, cement bonded; extended 1.22m (NE/SW) × 0.34m (SE-NW) × 0.38m; encountered 0.65m below ground level. Fill of [812], underlies (801)
	INTERPRETATION:	*Post-medieval cellar wall*
	[812]	Cut; linear in plan; extended 1.22m (NE/SW) × 0.34m (SE-NW) × 0.38m (based on dimensions of wall). Filled by (811), cuts (804)
	INTERPRETATION:	*Construction cut for wall (811). Cut not visible*
	(813)	Masonry; form unknown; rough-hewn stone (light grey) construction, size of materials: <0.24m × 0.13m × 0.07m; no bonding material; extended 1.64m (NE/SW) × 0.82m (SE-NW); encountered 1.4m below ground level. Overlies (804) Underlies (802)
	INTERPRETATION:	*Former path/roadway*
	(814)	Masonry; linear in plan with square opening in centre; brick & stone construction; extended 0.80m (NE/SW) × 0.52m (NW/SE) × 0.52m; encountered 1.16m below ground level; no coursing evident. Overlies (804) Underlies (802)
	INTERPRETATION:	*Stone-/brick- built drain/soak-away built directly onto (804)*
	(815)	Soft, mid reddish-brown silt; extended trench-wide to average thickness 0.46m; encountered 0.77m below ground level. Underlies (803), overlies (807)
	INTERPRETATION:	*Made-ground deposit*
RESULTS: A number of features were revealed, which are discussed in detail below, together with dateable pottery and clay pipe fragments		

5.8.1 Discussion

A fairly broad range of dateable finds, including pottery and five clay-pipe stems and two bowl fragments, was recovered from (803).

The pottery was of a generally coarse nature, reflecting a predominance of locally and regionally sourced wares (see Appendix 2). Most of the assemblage dated to the 18th century and it is possible either that the later material might have become incorporated during the deposition of earlier midden material to form a levelling dump or that these sherds were intrusive as a result of disturbance during ground works.

The clay-pipe assemblage recovered from the charcoal-rich deposit containing abundant pottery fragments and animal bone (803) could be separated into two distinct components, suggesting the presence of different horizons within the deposit. The first comprised two fragments displaying quite thick, chunky stems and large stem bores of 8/64" (see Appendix 3) which probably date from the period 1670-1700. The second, slightly later component comprised four rather more slender stems and an almost complete bowl. The bowl is a spur type with a flattened base to the spur, a stem bore of just over 6/64" and a lightly bottered rim that had been half milled (see Appendix 3). This Bristol-style bowl dates to c. 1700-30, consistent with the stems in this group.

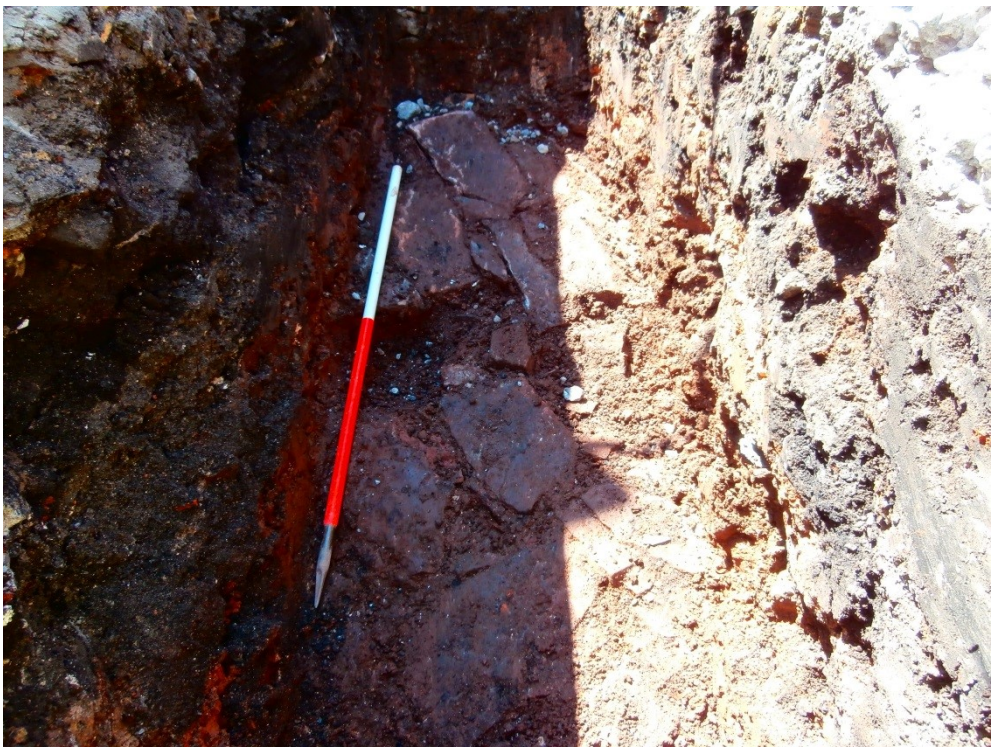


Plate 22: View to the W showing floor (813)

The drain or soak-away feature (814) located at the E end of the trench (*Plate 23; figs. 8 & 9*) did not appear to relate to a building. It is possible that the square opening within the masonry (*Plate 23*), which was built up with thin stone slabs, might represent a posthole and that the structure in its entirety related in some way to the entrance to St. James churchyard. An alternative interpretation might be that the feature supported a boundary structure associated with the area identified on Ashmead's map of 1855 as the 'Hay and Coal Market'. The surface (813) appeared most likely to relate to a former path or road; it would appear unlikely that it represents a floor surface, as no structures are recorded within its immediate vicinity.

Plate 23: View to the NE of possible posthole (814)

Walls (811) (*Plates 21 & 22; figs. 8-12*) and (805) appeared more difficult to associate with structures. Ashmead's 1855 map shows that between 1828 and 1855 the Horse Fair was realigned and Union Street laid-out; thus, unless it was the case that the basements associated with some properties extended beyond their respective building footprints then it would appear more likely that the walls relate to buildings depicted by Ashmead's earlier map of 1828.

Plate 24: View to the NE wall (811)

Plate 25: View NE of wall (805)

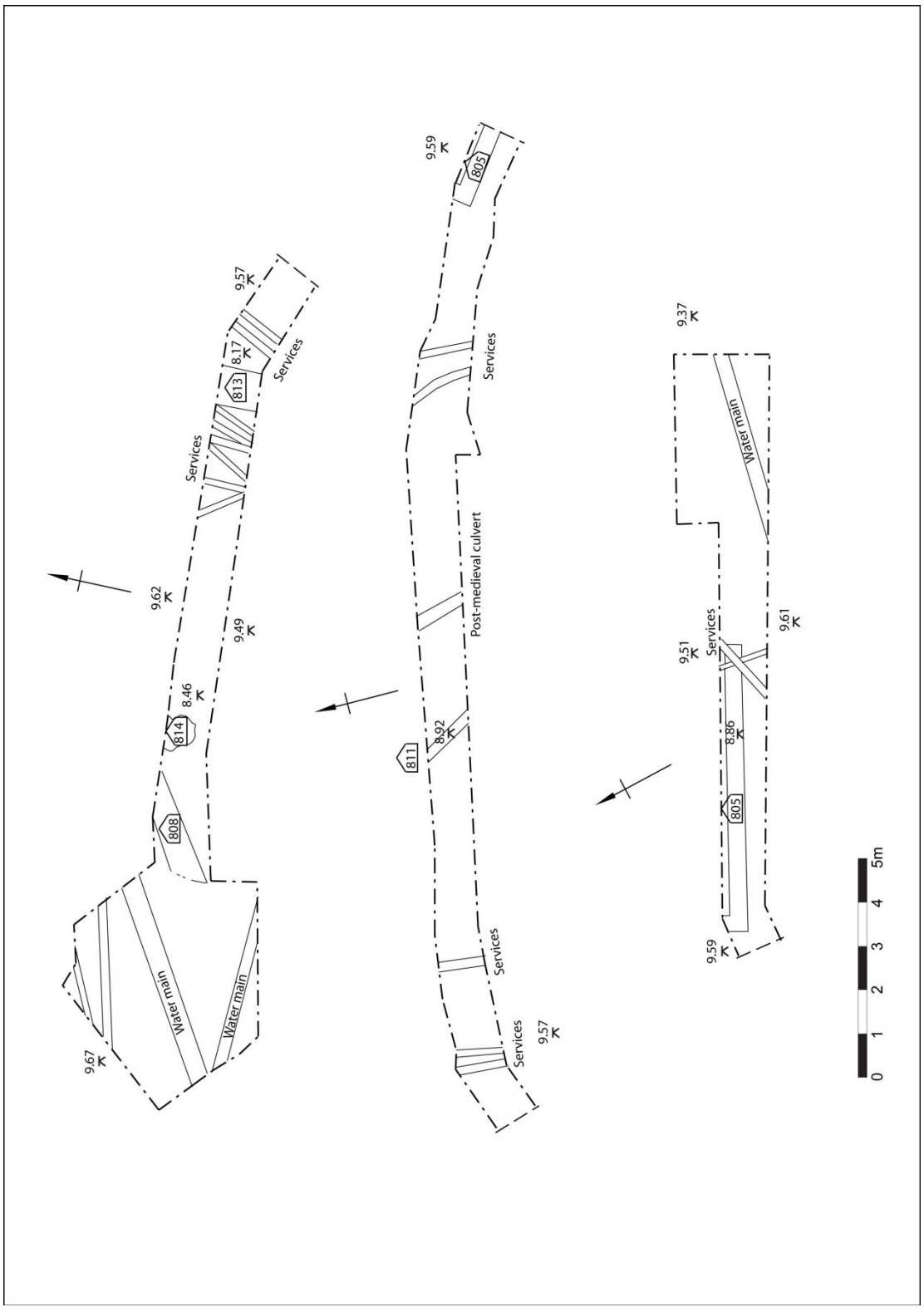


Fig. 8: Plan showing extent of features recorded in Trench 8

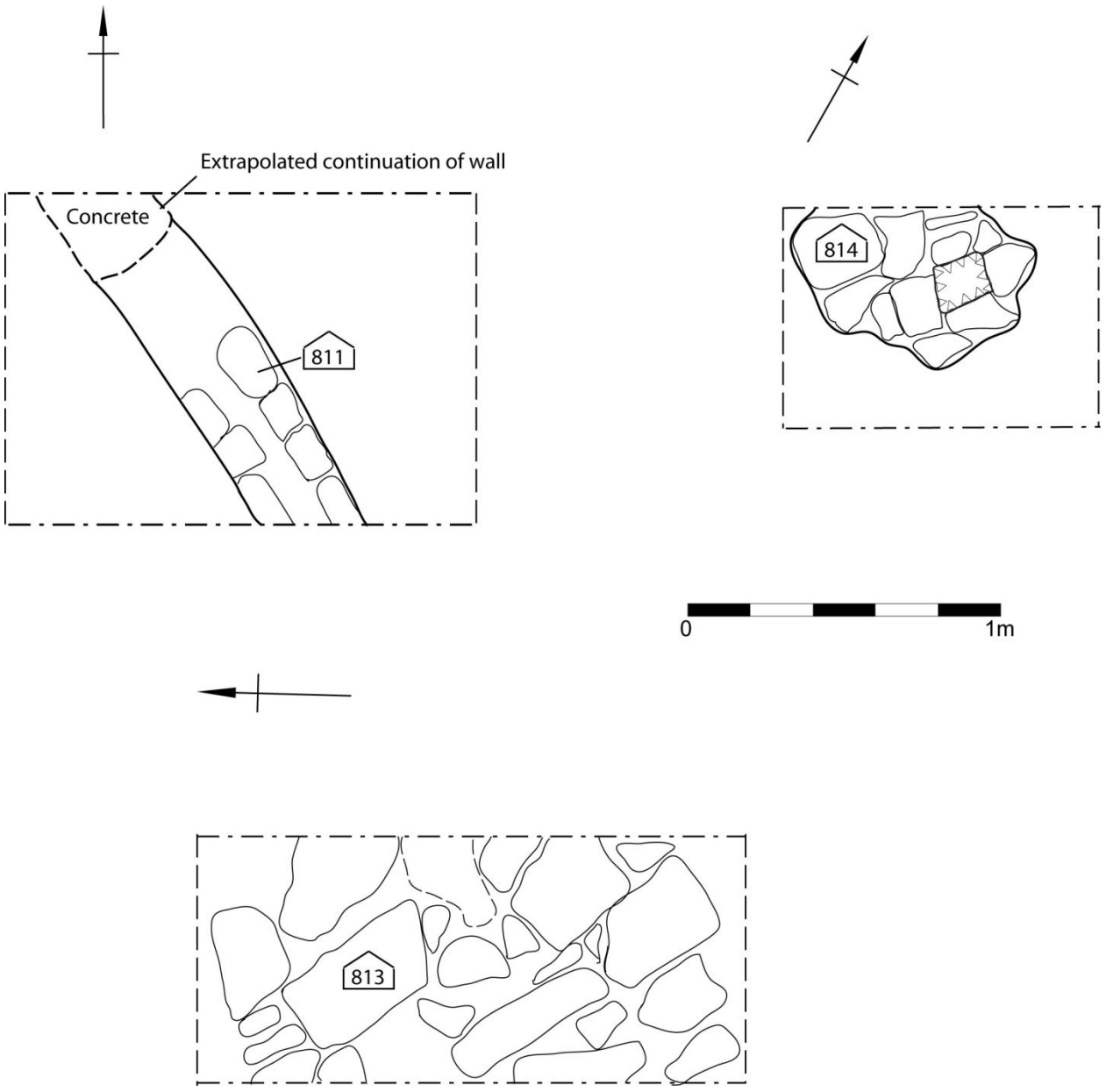


Fig. 9: Detail of features revealed within Trench 8

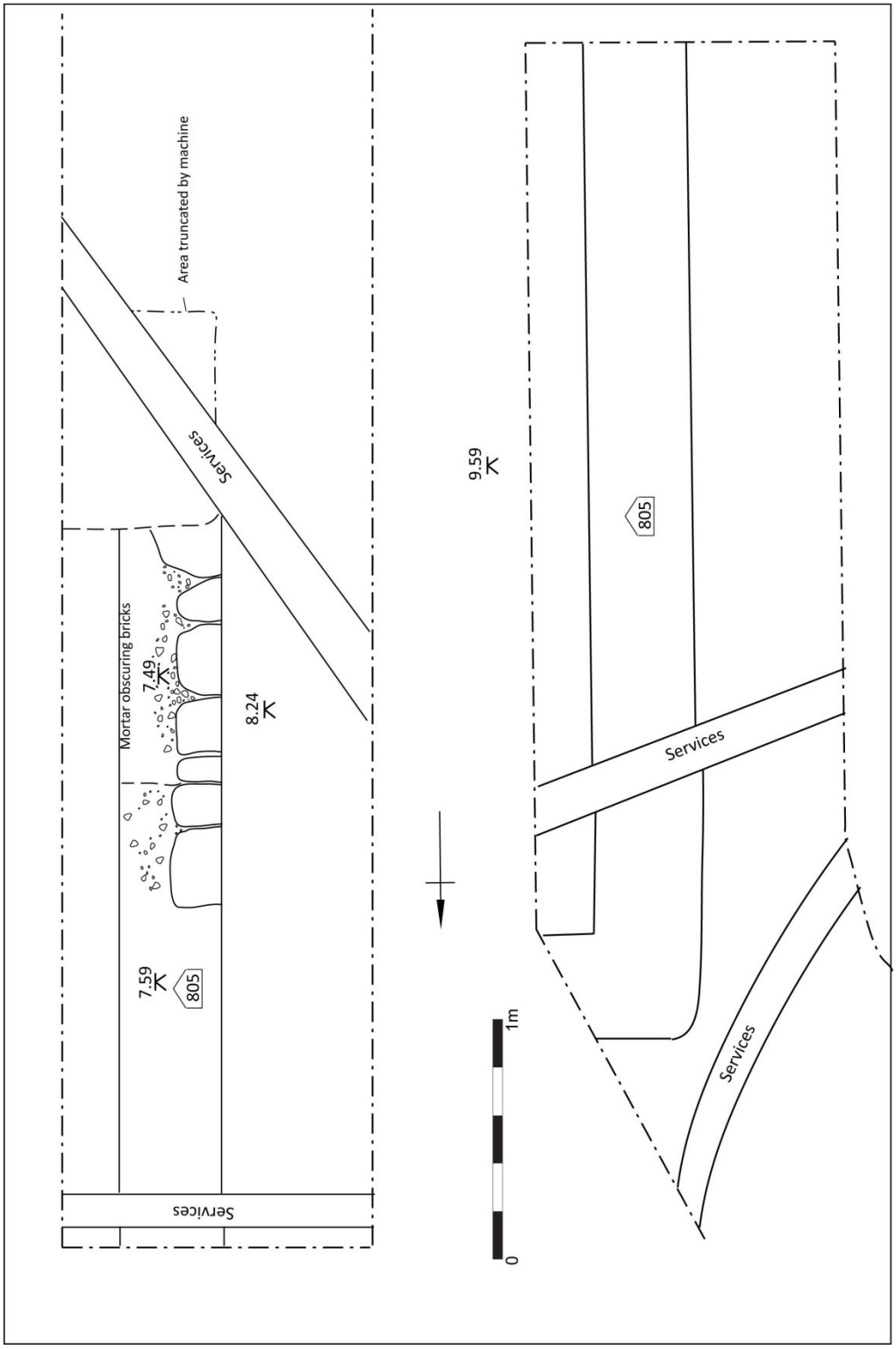


Fig. 10: Plan showing extent of wall (805)

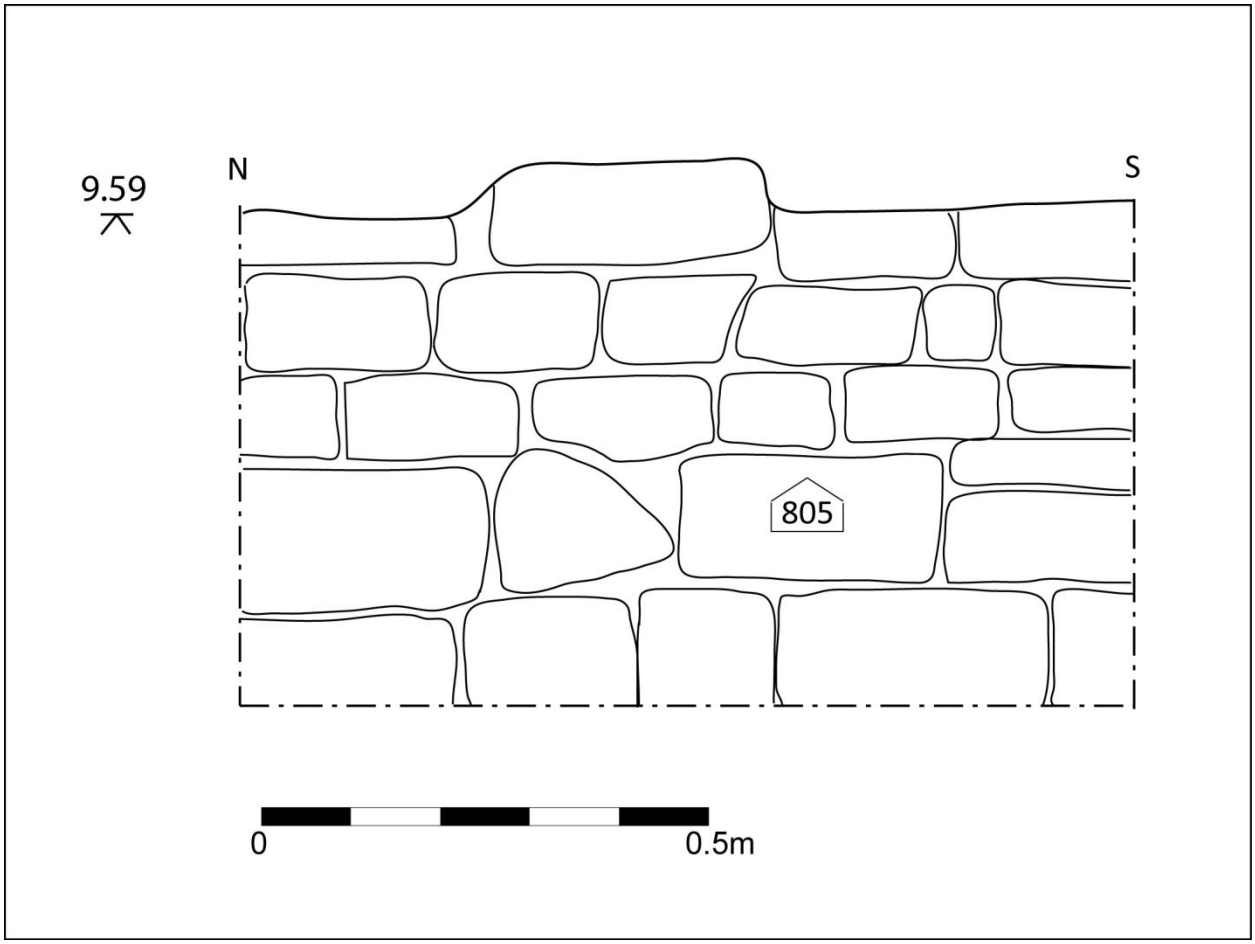


Fig. 11: W-facing elevation of wall (805)

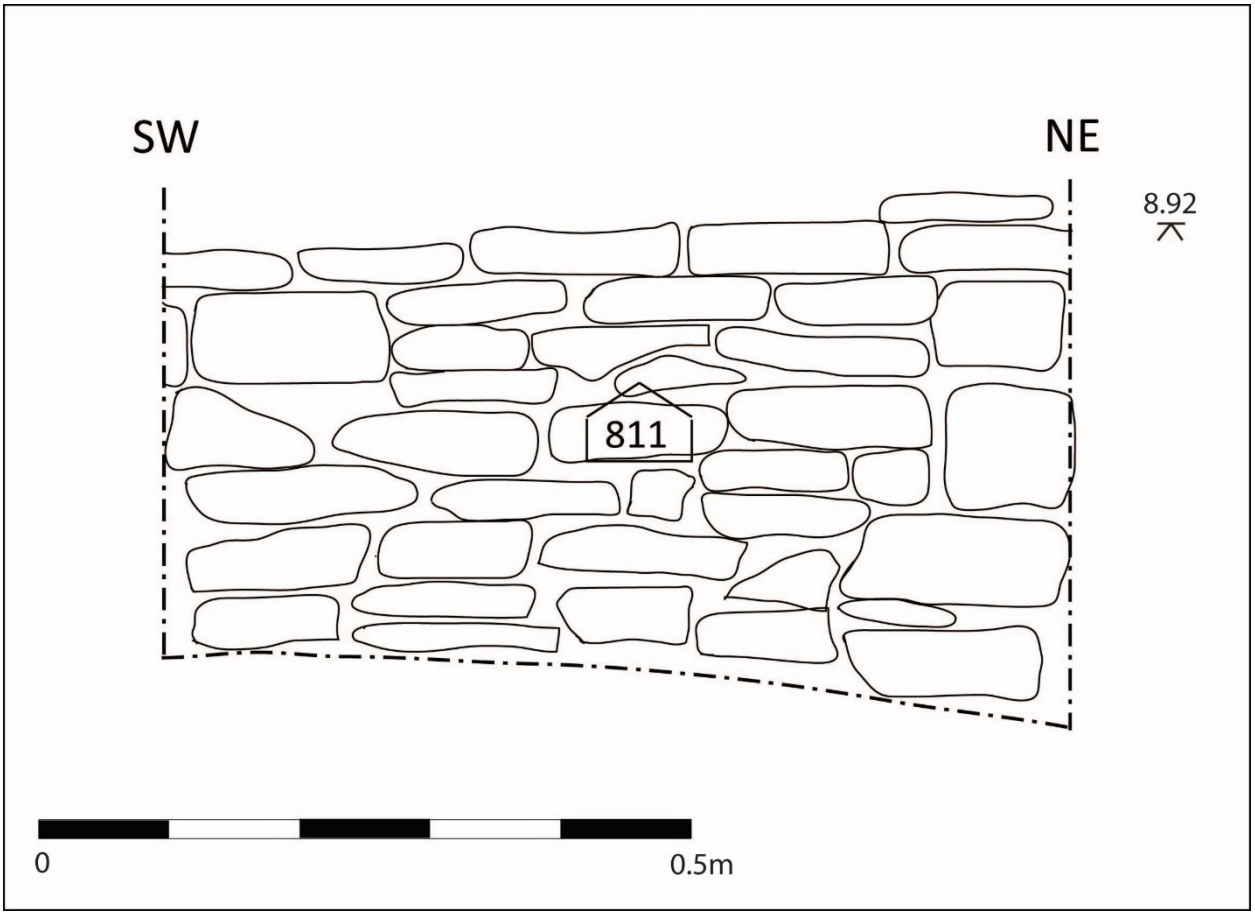


Fig. 12: SE-facing elevation of wall (811)

5.9 Trench 9

The trench (*Plate 26*) measured 6m (NW/SE) × 1.96m (NE/SW) × 1.21m (maximum depth). The trench was intersected by four modern electrical services running on varying alignments in addition to the 19th -century main.

Plate 26: View to the SE of Trench 9

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 58730 73500 NW end of Lower Maudlin Street on the line of the C19 main	(900)	Indurated dark grey tarmac; extended trench-wide to average thickness 0.17m. Overlies (901)
	INTERPRETATION:	*Tarmac surface*
	(901)	Indurated light grey concrete; extended trench-wide to average thickness 0.21m-0.69m; encountered at 0.17m below ground level. Underlies (900), overlies (902)
	INTERPRETATION:	*Associated bedding layer*
	(902)	Soft, mid reddish-brown sandy silt; moderate brick fragments and sub-rounded gravel <0.05m; extended trench-wide to average thickness 0.82m to limit of excavation; encountered at 0.38m below ground level. Underlies (901)
	INTERPRETATION:	*Made-ground deposit*
RESULTS: No significant archaeology		

5.10 Trench 10

The trench (*Plate 27*) measured 10m (NW/SE) 2.0m (NE/SW) × 1.99m (maximum depth).

Plate 27: View to the N of Trench 10

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 58752 73485 Lower Maudlin Street 9m south of trench 12 along the route of the C19 main	(1000)	Indurated dark grey tarmac; extended trench-wide to average thickness 0.32m. Overlies (1001)
	INTERPRETATION:	*Tarmac surface*
	(1001)	Indurated, light grey concrete; extended trench-wide to average thickness 0.37m; encountered 0.32m below ground level. Overlies (1002), underlies (1002)
	INTERPRETATION:	*Associated bedding layer*
	(1002)	Compacted, light grey concrete; extended trench-wide to average thickness 0.37m; encountered 0.32m below ground level. Overlies (1002), underlies (1002)
	INTERPRETATION:	*Made-ground deposit*
RESULTS: No significant archaeology		

5.11 Trench 11

Trench 11 (*Plate 28*) was initially excavated to locate a valve on the water main; the trench was later incorporated into the southern extent of Trench 3. The trench measured 5m (N/S) × 1.25m (E/W) × 0.79m (maximum depth).

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 59039 73189 Union Street north of the bridge crossing Fairfax Street	(1100)	Soft, light yellow sand; extended trench-wide to average thickness 0.03m. Overlies (1101)
	INTERPRETATION:	*Bedding layer for paving slabs*
	(1101)	Compact, light grey/black silty sand; moderate rubble and brick fragments; extended trench-wide to average thickness 0.30m-0.75m to limit of excavation; encountered 0.03m below ground level. Underlies (1100)
	INTERPRETATION:	*Made-ground deposit*
RESULTS: No significant archaeology		

Plate 28: View to the S of Trench 11 showing the exposed 19th -century water main

5.12 Trench 12

Trench 12 (*Plate 29*) measured 6.0m (NW/SE) × 3.0m (NE/SW) × 1.62m (maximum depth) and was intersected by five services cutting across the trench on varying alignments, including the 19th century main.

Plate 29: View to the N of Trench 12

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 58740 73492 Lower Maudlin Street between Trench 9 & Trench 10, opposite dental hospital	(1200)	Indurated tarmac; average thickness 0.1m. Overlies (1201)
	INTERPRETATION:	*Modern tarmac surface*
	(1201)	Indurated, light grey concrete, encountered at a depth of 0.19m; average thickness 0.42m. Underlies (1201), overlies (1203)
	INTERPRETATION:	*Bedding layer (2502) associated with (1200)*
	(1202)	Soft, mid reddish-brown silty clay; moderate brick fragments & concrete rubble; encountered at a depth of 0.61m; average thickness 1.22m to limit of excavation. Underlies (1201)

LOCATION		CONTEXT	DESCRIPTION
		INTERPRETATION:	*Made-ground associated with backfill of the C19 service trench, although this deposit had been disturbed by the 5 modern services crossing the trench on varying alignments.*
RESULTS: No significant archaeology: the stratigraphic profile revealed a sequence of modern made ground and levelling layers.			

5.13 Trench 13

The trench (*Plates 30-2, figs. 13 & 14)*) measured 3.90m (NE/SW) × 2.80m (NW/SE) × 1.52m (maximum depth) and served to locate the 19th -century water main.

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 58673 73416 Upper Maudlin Street NE of the traffic light crossing in front of the Bristol Royal Hospital for Children along the route of the C19 main.	(1300)	Indurated tarmac, extended to a depth of 0.10m. Overlies (1301)
	INTERPRETATION:	*Tarmac surface*
	(1301)	Indurated light grey concrete; extending trench-wide with an average thickness of 0.25m; encountered 0.10m below ground level. Underlies (1300), overlies (1304)
	INTERPRETATION:	*Associated bedding layer*
	(1302)	Soft, mid red brown sandy clay; occasional sub-angular stones < 0.09m; moderate brick rubble; extending trench-wide with an average thickness 1.06m to the limit of excavation; encountered at 0.75m below ground level. Overlies (1306), underlies (1303)
	INTERPRETATION:	*Levelling layer*
	(1303)	Soft, mid brown silt; moderate charcoal flecks; extending 0.86m (E/W) × 0.62m (N/S) in the NE corner of the trench with an average thickness of 0.4m; encountered 0.36m below ground level. Overlies (1302), cut by [1308]
	INTERPRETATION:	*Levelling layer*
	(1304)	Cemented, light grey concrete; extending 0.32m (E/W) × 2.32m (N/S) with an average thickness of 0.55m; encountered 0.36m below ground level. Fill of [1308], underlies (1301)
	INTERPRETATION:	*Backfill of service [1308]*
	[1305]	Construction cut; not visible, assigned for the matrix only. Cuts (1307), filled by (1306)
	INTERPRETATION:	*Construction cut for wall (1306)*
	(1306)	Masonry; linear plan; constructed from bricks and roughly hewn stones; size of materials: <0.31m × 0.27m; encountered 0.95m below ground level; extending 1.01m (E/W); N/S extent unclear. Fill of [1305], overlain by (1302)
	INTERPRETATION:	*Partial remains of cellarage, post-medieval*

LOCATION		CONTEXT	DESCRIPTION
		(1307)	Soft, mid brown silt; occasional stones <0.05m; extending 0.09m (E/W); N/S extent not known; encountered 0.93m below ground level. Cut by [1305]
		INTERPRETATION:	*Possible buried soil horizon*
		[1308]	Cut; linear; N/S aligned; extended 0.32m (E/W) × 2.32m (N/S); break of slope top and base sharp, sides steeply sloping, base flat; encountered 0.36m below ground level. Filled by (1304), cuts (1303)
		INTERPRETATION:	*Service trench*
NOTE: The wall (1306) had been heavily truncated by the original water main trench and further modern services but traces appeared to survive in three sections of the trench.			

5.13.1 Discussion

- Examination of the historic map evidence commencing with Roque's plan of 1750 indicates the presence of a rectangular structure in approximately this location and suggests that (1306) (*Plates 31-2; figs. 13 & 14*) may represent an inner cellar wall beneath this building. The rectangular plot shown immediately to the SW on Roque's map was subsequently sold to the trustees of the Welsh Particular Baptist Chapel in 1839 and a chapel building (Record No. 1107M) erected in 1840-1-3 on the site, which eventually closed *c*. 1970 and was demolished in 1978. Subsequent maps - including Ashmead's map of 1855, the fire insurance plan of 1887 compiled by Charles E Goad Ltd and successive editions of the Ordnance Survey – show both the Chapel and the rectangular structure to the NE, which Goad's plan identifies as a warehouse.

.

Plate 30: View to the S of Trench 13

Plate 31: View to the W of possible wall (1306)

Plate 32: View N showing possible wall (1306)

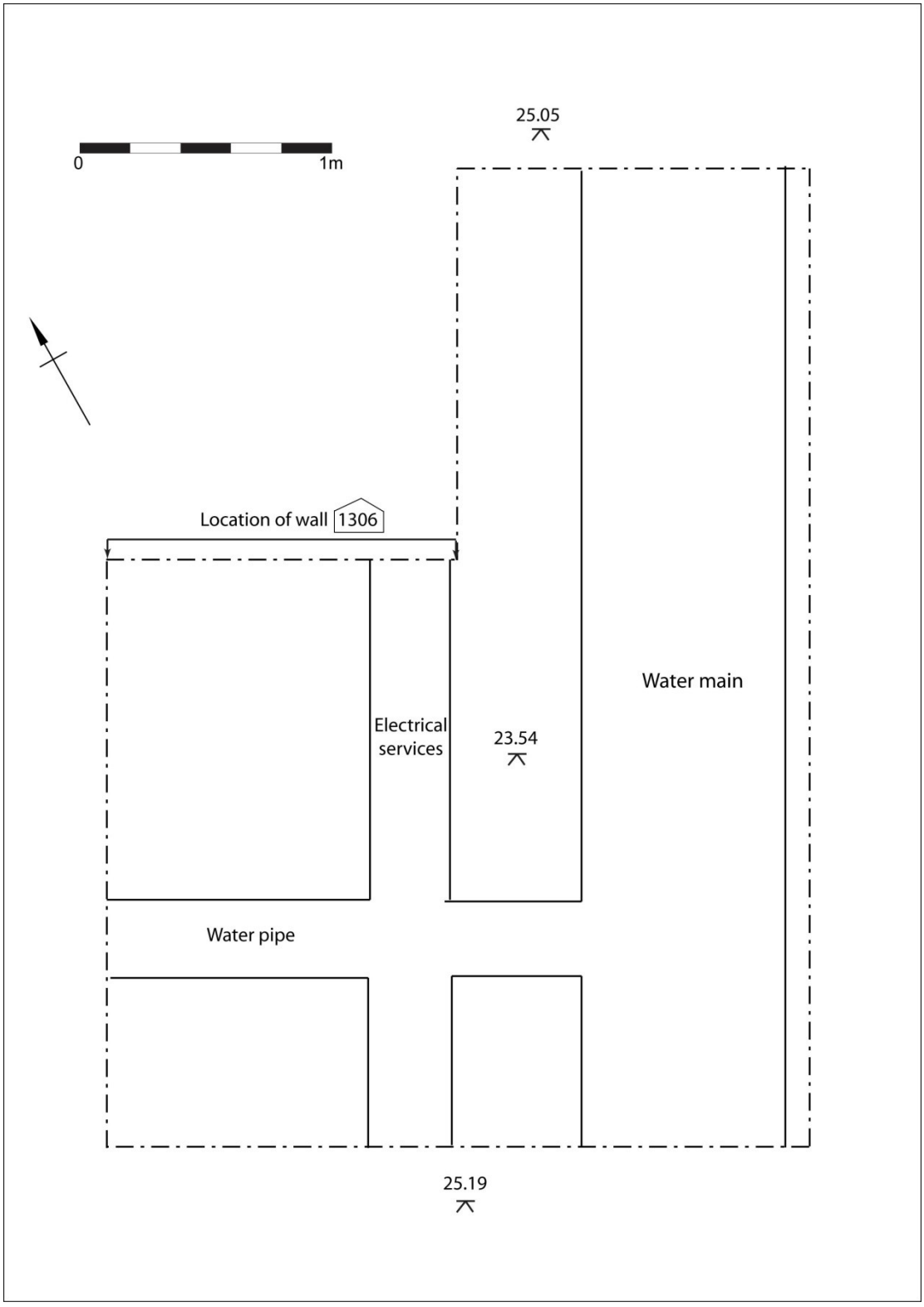


Fig. 13: Plan of Trench 13 showing location of wall (1306)

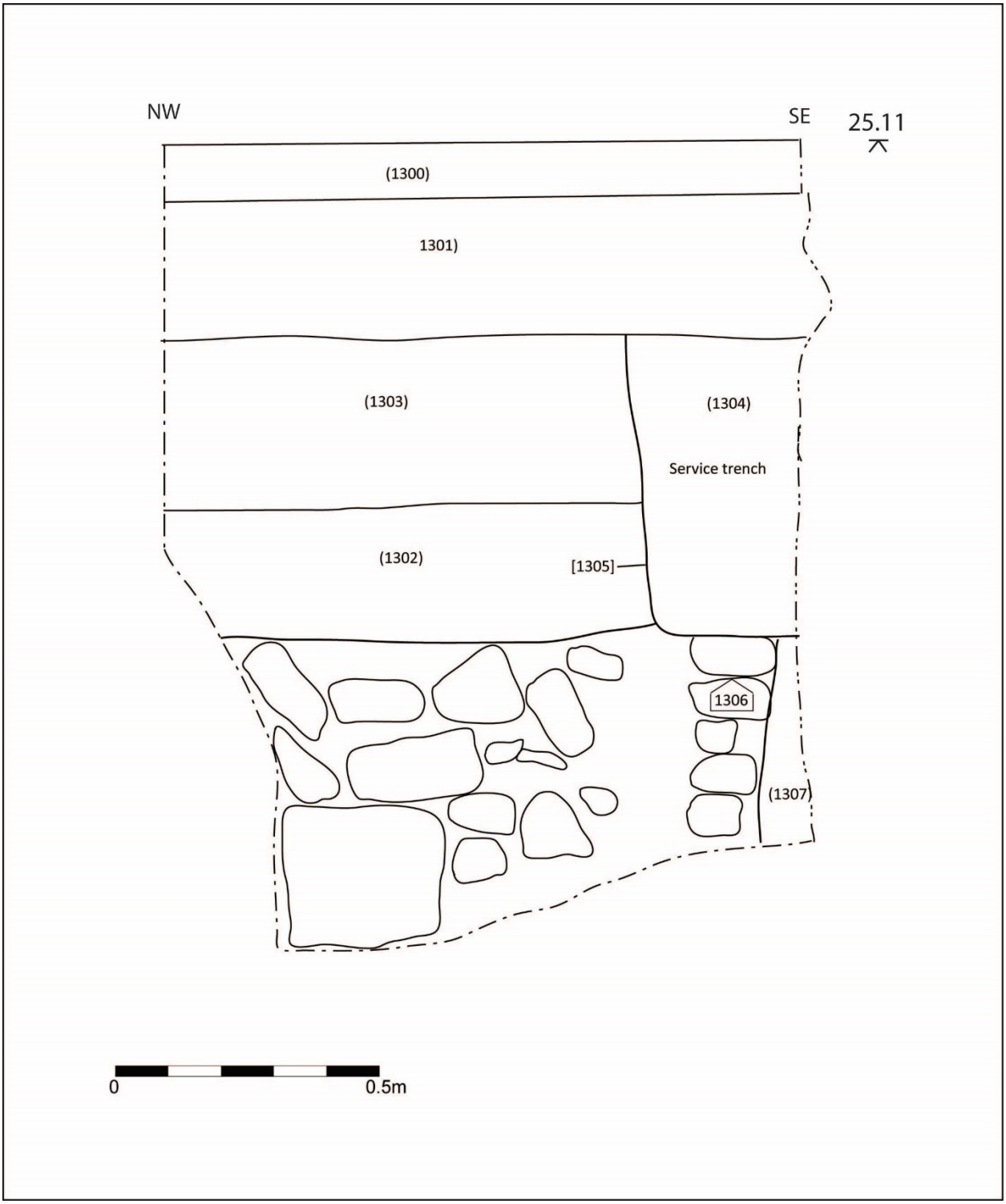


Fig. 14: SW-facing section of Trench 13 showing detail of wall (1306)

5.14 Trench 14

Trench 14 (*Plate 33*) was opened for the insertion of a new pipe and measured 7m (NE/SW) × 2.4m (NW/SE) × 1.32m (maximum depth).

Plate 33: View to the N of Trench 14

LOCATION	**CONTEXT**	**DESCRIPTION**
NGR: ST 58694 73450 Upper Maudlin Street along route of C19	(1400)	Indurated grey tarmac surface; average thickness of 0.18m. Overlies (1401)
	INTERPRETATION:	*Modern tarmac surface*
	(1401)	Indurated light grey concrete; average thickness of 0.26m. Underlies (1400), overlies (1402)
	INTERPRETATION:	*Associated bedding layer*

	(1402)	Soft, mid reddish-brown sandy silty clay; frequent mixed rubble, moderate brick fragments; encountered at a depth of 0.44m, average thickness 0.61m, extending to base of excavation. Underlies (1401)
	INTERPRETATION:	*Made-ground deposit associated at the backfill deposit of the C19 service trench*
RESULTS: No significant archaeology		

5.15 Trench 15

Trench 15 (*Plate 34*) served to a blocked bend in the main and measured 7m (E/W) × 1.47m (N/S) × 1.8m (maximum depth).

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 58725 73502 NE end of Lower Maudlin Street at junction with Upper Maudlin Street	(1500)	Indurated tarmac surface; average thickness of 0.10m. Overlies (1501)
	INTERPRETATION:	*Modern tarmac surface*
	(1501)	Friable light yellowish-brown sand; frequent gravel inclusions; average thickness of 0.09m. Underlies (1500), overlies (1502)
	INTERPRETATION:	*Levelling layer*
	(1502)	Indurated light grey concrete; encountered at a depth of 0.19m with an average thickness of 0.42m. Underlies (1501), overlies (1503)
	INTERPRETATION:	*Bedding layer (1502) associated with (1500)*
	(1503)	Soft mid reddish-brown silty clay; moderate brick fragments & concrete rubble, encountered at a depth of 0.61m with an average thickness of 1.22m to limit of excavation. Underlies (1502)
	INTERPRETATION:	*Made-ground associated with the backfill of the C19 service trench, although this deposit has been disturbed by the 5 modern services which bisect the trench on varying alignments.*
RESULTS: No significant archaeology: the stratigraphic profile showed a sequence of modern made-ground and levelling layers.		

Plate 34: View to NW of Trench 15

5.16 Trench 16

Trench 16 (*Plates 35 & 36, figs. 15 & 16*) allowed the insertion of a new main and measured 12m (E/W) × 1.7m (N/S) × 1.32m (maximum depth).

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 58462 73148 Perry Road along the route of the C19 main	(1600)	Indurated tarmac; average thickness of 0.08m. Overlies (1601)
	INTERPRETATION:	*Modern tarmac surface*
	(1601)	Indurated light grey cement; encountered at a depth of 0.08m with an average thickness of 0.22m. Underlies (1600), overlies (1602)
	INTERPRETATION:	*Bedding layer (1601) associated with (1600)*
	(1602)	Friable, mid reddish-brown silty clay; frequent brick fragments and stones <60mm; encountered at 0.3m; average thickness 1.02m to limit of excavation. Overlies (1603), underlies (1601)
	INTERPRETATION:	*Levelling layer*
	(1603)	Masonry; linear in plan; rough-hewn stone construction, size of materials: <360mm × 390mm × 240mm, cement bonding; 2 courses; measures 1.5m (E/W) × 0.39m (N/S) × 0.4m. Overlies (1604), underlies (1602)
	INTERPRETATION:	*Partial remains of cellarage (1603) associated with a former property on Griffin Lane*
	(1604)	Friable, light red and grey mottled cement; encountered at a depth of 1.37m. Underlies (1603)
	INTERPRETATION:	*Foundation layer associated with wall (1603)*
RESULTS: Partial remains of cellarage revealed (discussed below)		

Plate 35: View to the E of Trench 16

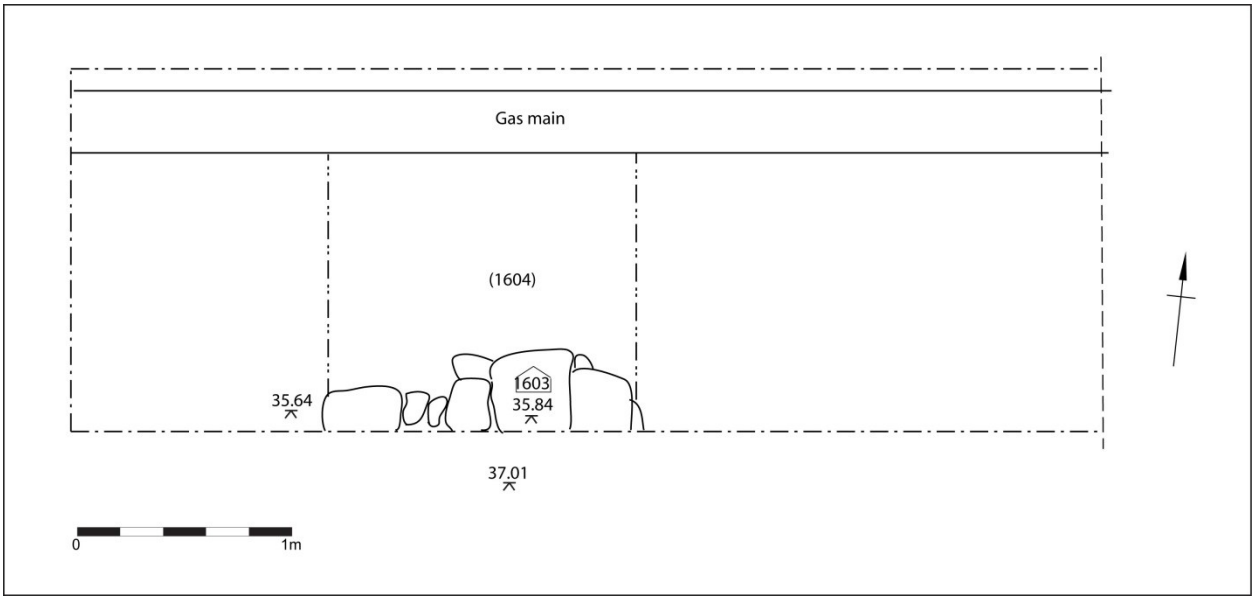


Fig. 15: Plan showing Wall (1603)

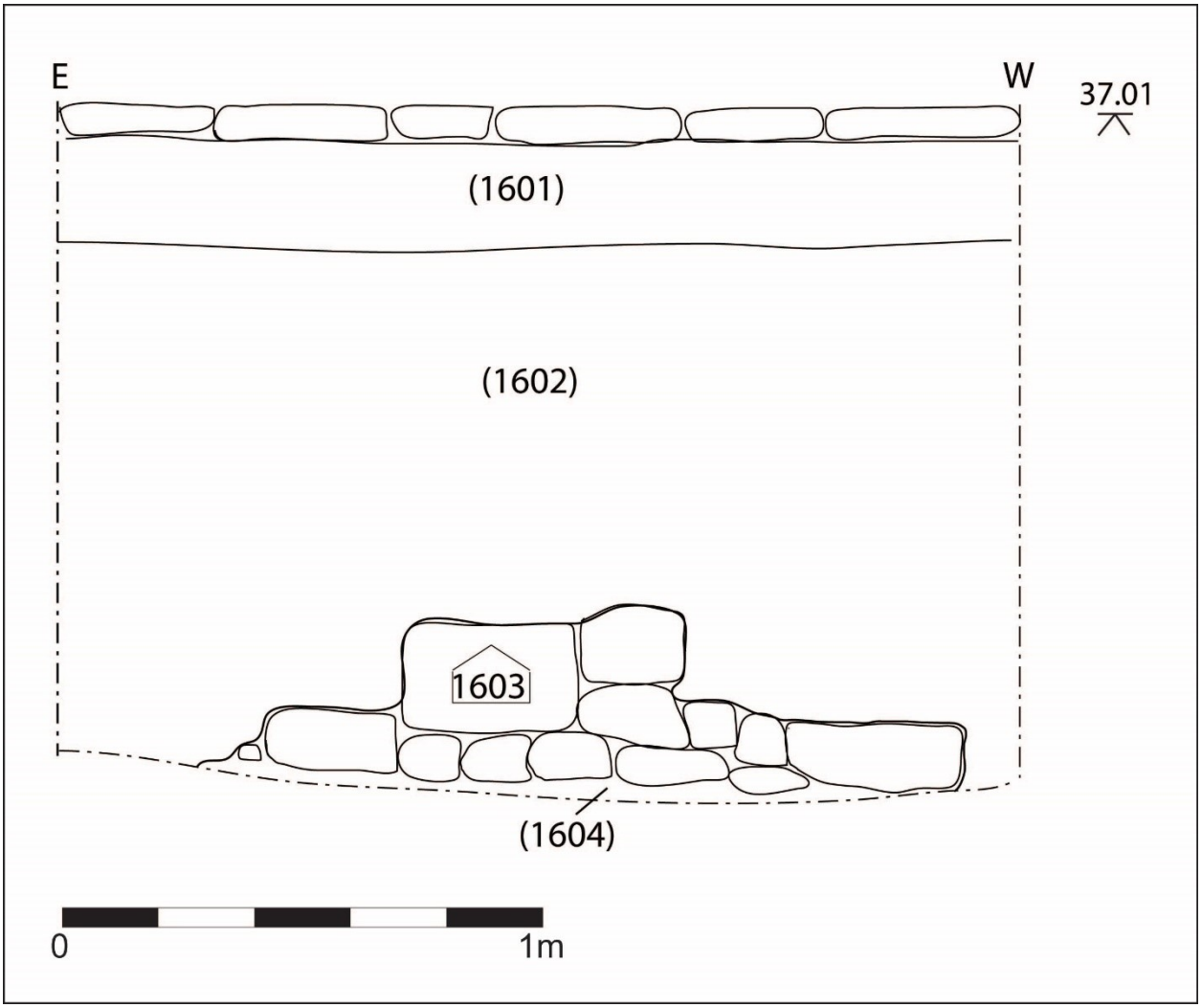


Fig. 16: N-facing section showing elevation of wall (1603)

Plate 36: View to the W of wall (1603)

5.16.1 Discussion

The N/S wall (1603) (*Plate 36; figs. 15 & 16*) found in Trench 16 appeared to belong to a property that stood at the SW end of Griffin Lane at the junction with Lower Park Row and Church Lane, its thickness suggesting an external wall.

5.17 Trench 17

Trench 17 (*Plates 37-41*) served to reroute the water main reconditioning pipe as the 19th -century main was inaccessible beneath and existing footway. The trench measured 400m (NW/SE) × 1m (NE/SW) × 2.05m (maximum depth). The trench was crossed by a number of services on varying alignments at depths of 0.3m–1.4m below ground level. The resulting disturbance precluded the survival of any archaeological deposits, the stratigraphic profile consisting predominantly of modern made-ground and levelling layers.

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 59364 72551 Victoria street running from the NW side of the Temple Circus Gyratory to the SE side of Bristol Bridge	(1700)	Indurated tarmac; encountered trench-wide; average thickness 0.07m. Overlies (1701)
	INTERPRETATION:	*Modern tarmac surface*
	(1701)	Cemented, light grey concrete; extended trench-wide; encountered 0.07m below ground level; average thickness 0.36m. Overlies (1702) (1705) (1710) (1716), underlies (1700)
	INTERPRETATION:	*Bedding layer (1700) associated with (1701)*
	(1702)	Friable, dark red brown silt; moderate brick rubble & oyster shell; extended 3m (NW/SE) × 1m (NE/SW); encountered 0.43m below ground level; average thickness 0.85m. Underlies (1701), overlies (1703)
	INTERPRETATION:	*Modern made-ground deposit*
	(1703)	Soft, dark black brown silt; very frequent charcoal; extended 1.02m (NW/SE) × 1.0m (NE/SW); encountered 1.28m below ground level; average thickness 0.08m. Underlies (1702), overlies (1704)
	INTERPRETATION:	*Levelling layer derived from a dump of charcoal-rich material*
	(1704)	Friable, light grey and red stone rubble; extended 0.84m (NW/SE) × 1m (NE/SW); average thickness 0.95m. Underlies (1703)
	INTERPRETATION:	*Levelling layer*
	(1705)	Firm, very dark brown clayey silt; moderate charcoal flecking, moderate brick fragments, occasional oyster shell; extended 13m (NW/SE) × 1m (NE/SW); average thickness 0.42m. Abuts (1704), underlies (1701) , overlies [1706] (1709)
	INTERPRETATION:	*Levelling layer*

LOCATION	CONTEXT	DESCRIPTION
	(1706)	Masonry; linear in plan; rough-hewn stone/brick construction; cement bonding; extended 1m (E/W) × 0.41m (N/S); average thickness 0.35m. Fill of [1707], underlies (1705)
	INTERPRETATION:	*Stone wall foundation*
	[1707]	Cut; linear in plan; aligned E/W; break of slope top unknown, sides steeply sloping, break of slope base sharp, base flat; extended 1m (E/W) × 0.41m (N/S). Cuts (1708), filled by (1706)
	INTERPRETATION:	*Construction cut for wall (1706)*
	(1708)	Firm, mid orangey-brown sandy clay; frequent gravel inclusions, sub-angular stones <0.12m and moderate brick rubble; extended 25m (NW/SE) × 1m (NE/SW); average thickness 0.55m. Cut by [1707], overlies (1709)
	INTERPRETATION:	*Made-ground deposit*
	(1709)	Friable light yellowish-brown sand; frequent brick fragment & stone <0.09m; extended 6.0m (NW/SE) × 1m (NE/SW); average thickness 0.35m. Underlies (1708)
	INTERPRETATION:	*Made-ground deposits*
	(1710)	Friable, very dark brown silt; very frequent charcoal, frequent stones of <0.15m; extended 6m (NW/SE) × 1m (NE/SW); average thickness 0.25m. Similar to (1703), underlies (1701), overlies (1711)
	INTERPRETATION:	*Made-ground deposit*
	(1711)	Friable, light red sand; very frequent brick fragments; extended 10m (NW/SE) × 1m (NE/SW); average thickness 0.26m. Similar to (1709) & (1717), underlies (1710), overlies (1712)
	INTERPRETATION:	*Made-ground deposit derived from demolition material*
	(1712)	Soft, dark greyish-brown silty clay; occasional stones; extended 4m (NW/SE) × 1m (NE/SW); average thickness 0.25m. Underlies (1711), overlies (1713) (1714)
	INTERPRETATION:	*Made-ground deposit*
	(1713)	Firm, mid brownish-red sandy clay; moderate stones of <0.2m & brick fragments, frequent gravels; extended

LOCATION	CONTEXT	DESCRIPTION
		40m (NW/SE) × 1.0m (NE/SW); average thickness 0.4m to limit of excavation. Similar to (1708), underlies (1712)
	INTERPRETATION:	*Made-ground deposit*
	(1714)	Friable, mid red sand; frequent brick fragments; extended 4m (NW/SE) × 1m (NE/SW); average thickness 0.3m to the limit of excavation. Underlies (1712)
	INTERPRETATION:	*Made-ground deposit similar to (1711)*
	(1715)	Masonry; linear in plan; constructed from roughly hewn stones; single course survives; measured 1.90m (N/S) × 0.22m (E/W), encountered 1.40m below ground level. Underlies (1717)
	INTERPRETATION:	*Partial remains of cellarage/wall foundation*
	(1716)	Friable, dark brown/black sandy silt; very frequent charcoal flecks, moderate brick fragments; extended 0.56m (NW/SE) × 1.0m (NE/SW); encountered 0.55m below ground level; average thickness of 0.7m. Underlies (1701), overlies (1717)
	INTERPRETATION:	*Made-ground deposit*
	(1717)	Compact, mid yellowish- brown crushed brick and rubble; encountered 1.25m below ground level; extended 0.56m (NW/SE) × 1m (NE/SW); average thickness 0.25m. Overlies (1715) (1721), underlies (1716)
	INTERPRETATION:	*Made-ground deposit derived from crushed brick and rubble*
	(1718)	Firm, dark greyish-blue clay; encountered 1.42m below ground level; average thickness 0.7m; extended 9m (NW/SE) × 1m (NE/SW). Underlies (1717), overlies (1719), cut by [1723]
	INTERPRETATION:	*Horizon of gleyed clay – natural geology*
	(1719)	Firm, mid yellowish-brown clay; encountered 2.05m below ground level; extended 9m (NW/SE) × 1m (NE/SW). Underlies (1718)
	INTERPRETATION:	*Natural geology*
	(1720)	Masonry; linear in plan; brick construction; aligned NE/SW; encountered 1.3m below ground level; measured 1.05m (NW/SE) × 1m (NE/SW). Fill of [1723], filled by (1722)

LOCATION	CONTEXT	DESCRIPTION
	INTERPRETATION:	*Post-medieval brick culvert*
	(1721)	Friable, light brown gravel; encountered 1.3m below ground level; extended 6m (NW/SE) × 1m (NE/SW); average thickness 0.35m. Overlies (1720), underlies (1717)
	INTERPRETATION:	*Made-ground deposit*
	(1722)	Soft, dark brown silt; encountered 1.37m below ground deposit; extended 0.91m (NW/SE) × 1m (NE/SW); average thickness 0.6m to the limit of excavation. Fills (1720)
	INTERPRETATION:	*Backfill of culvert (1720) derived from gradual silting from waterborne deposits*
	[1723]	Cut; aligned NW/SE. Cuts (1718), filled by (1720)
	INTERPRETATION:	*Construction cut for culvert (1720). Cut not visible*
	(1724)	Friable, light brown silt & lenses of mid brown clay; abundant crushed brick; encountered 0.43m below ground level; extended 10m (NW/SE) × 1m (NE/SW) × 0.87m (average thickness to the limit of excavation). Underlies (1701)
	INTERPRETATION:	*Made-ground deposit*
	(1725)	Friable, black charcoal; extended 3m (NW/SE) × 1m (NE/SW); average thickness 0.09m; encountered 0.38m below ground level. Underlies (1701), overlies (1726)
	INTERPRETATION:	*Dump of charcoal-rich material*
	(1726)	Friable, light red sand; frequent crushed brick; extended 7m (NW/SE) × 1m (NE/SW); average thickness 0.35m; encountered 0.47m below ground level. Underlies (1725), overlies (1727)
	INTERPRETATION:	*Made-ground deposit derived from crushed brick & rubble*
	(1727)	Soft, dark black silty clay; very frequent charcoal flecks; extended 30m (NW/SE) × 1m (NE/SW); average thickness 0.68m to the limit of excavation; encountered 0.82m below ground level. Underlies (1726) (1728)
	INTERPRETATION:	*Made-ground/levelling layer*
	(1728)	Friable, mid greyish-brown sandy silt; extended 30m (NW/SE) × 1m (NE/SW) ×

LOCATION	CONTEXT	DESCRIPTION
		0.44m (average thickness); encountered 0.38m below ground level. Underlies (1701) Overlies (1727)
	INTERPRETATION:	*Made-ground/levelling layer*
	(1729)	Friable, mid grey sandy silt; moderate charcoal flecking, occasional oyster shell, frequent rubble of <170mm; extended 35m (NW/SE) × 1m (NE/SW) × 0.79m (average thickness); encountered 0.21m below ground level. Underlies (1701), overlies (1730)
	INTERPRETATION:	*Made-ground/levelling layer*
	(1730)	Friable, mid orangey-brown sandy clay; frequent rubble & crushed brick of <110mm; extended 45m (NW/SE) × 1m (NE/SW) × 0.4m (average thickness to limit of excavation); encountered 1m below ground level. Underlies (1729) (1732)
	INTERPRETATION:	*Made-ground/levelling layer*
	(1731)	Friable, black charcoal; extended 10m (NW/SE) × 1m (NE/SW) × 0.29m (average thickness); encountered 0.21m below ground level. Underlies (1701), overlies (1732)
	INTERPRETATION:	*Dump of charcoal-rich material forming levelling deposit.*
	(1732)	Friable, mid orange sand; frequent brick fragments & rubble of <120mm; extended 1.6m (NW/SE) × 1m (NE/SW) × 0.29m (average thickness); encountered 0.50m below ground level. Underlies (1731), overlies (1730)
	INTERPRETATION:	*Made-ground deposit*
	(1733)	Friable, mid greyish-brown silt; moderate brick & chalk fragments; extended 30m (NW/SE) × 1m (NE/SW) × 0.15m (average thickness); encountered 0.40m below ground level. Underlies (1701), overlies (1734)
	INTERPRETATION:	*Made-ground deposit*
	(1734)	Friable, mid brownish-red sand; frequent crushed brick; extended 30m (NW/SE) × 1m (NE/SW) × 0.46m (average thickness); encountered 0.55m below ground level. Underlies (1733), overlies (1735) (1736)
	INTERPRETATION:	*Made-ground deposit*

LOCATION	CONTEXT	DESCRIPTION
	(1735)	Friable, mid greyish-brown silt; occasional charcoal flecking, moderate oyster shell; extended 10m (NW/SE) × 1m (NE/SW) × 0.42m (average thickness); encountered 1.01m below ground level. Underlies (1734), overlies (1736)
	INTERPRETATION:	*Buried soil horizon*
	(1736)	Soft, dark greenish-grey clay; encountered 1.43m below ground level × 0.17m (average thickness to limit of excavation). Underlies (1734) (1735)
	INTERPRETATION:	*Natural geology*
	(1737)	Soft, dark grey/black silt; abundant charcoal flecking, occasional rubble; extended 23m (NW/SE) × 1m (NE/SW); encountered 0.56m below ground level; average thickness 0.41m. Underlies (1701), overlies (1738)
	INTERPRETATION:	*Made-ground deposit*
	(1738)	Soft, mid reddish-brown sandy clay; moderate brick rubble; extended 23m (NW/SE) × 1m (NE/SW); encountered 0.97m below ground level; average thickness 0.42m to limit of excavation. Underlies (1737)
	INTERPRETATION:	*Made-ground deposit*
	(1739)	Masonry; linear in plan; brick construction; aligned NE/SW; truncated by modern service trenches. Underlies (1738)
	INTERPRETATION:	*Post-medieval wall*
RESULTS: Three C19 wall foundations were encountered in section, which appeared to relate to former properties situated on the W extent of Temple Street and the E extent of Thomas Street. A series of made-ground deposits and levelling layers were also revealed, probably resulting from the realignment of Victoria Street.		

Plate 37: View to the SE of Trench 17

Plate 38: View to the NW of Trench 17

Plate 39: View NW showing wall foundation (1706)

Plate 40: View N showing wall (1715)

Plate 41: View NW of brick culvert (1720)

5.17.1 Discussion

Excavation of this trench revealed a series of modern made-ground deposits and levelling layers, most likely a result of 1870s-80s redevelopment activity, when Temple Street and Thomas Street were replaced by Victoria Street on its current alignment. Excavation of this trench also revealed truncation by variously aligned service trenching extending to depths of 0.3-1.6m below ground level, these trenches clearly impacting upon any archaeological features or deposits surviving at the time of installation.

Three wall foundations - (1706), (1715) & (1739) - were encountered in section, all of which appeared post-medieval in date and, in all likelihood, relate to the 19th –century properties aligned on the western extent of Temple Street and the eastern extent of Thomas Street. In each case, the under- and overlying deposits were sterile and devoid of dating evidence.

The maximum depth of the trench measured 2.05m below ground level, at which point natural geology was encountered.

5.18 Trench 18

The trench measured 90m (E/W) × 2m (N/S) ×1.4m (maximum depth) and was crossed by a number of services running N/S (*Plates 42 & 43*). Modern water pipes ran E/W parallel to the 19th -century main.

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 58281 73099 Park Row along the route of the C19 main	(1800)	Indurated, dark grey tarmac; extended trench-wide × 0.13m (average thickness). Overlies (1801)
	INTERPRETATION:	*Tarmac surface*
	(1801)	Cemented, light grey concrete; extended trench-wide; average thickness 0.20m; encountered 0.13m below ground level. Underlies (1800), overlies (1802)
	INTERPRETATION:	*Associated bedding layer*
	(1802)	Friable, mid reddish-grey gravel; extended 10m (E/W) × 0.5m (N/S) × 0.4m (average thickness); encountered 0.33m below ground level. Overlies (1803), underlies (1801)
	INTERPRETATION:	*Gravel hard-core layer covering services*
	(1803)	Friable, mid reddish-brown clayey silt; very frequent stone of <0.09m; frequent crushed brick; extended trench-wide; average thickness 0.67m to the limit of excavation; encountered 0.73m below ground level. Underlies (1802)
	INTERPRETATION:	*Made-ground deposit*
	(1804)	Soft, light reddish-brown sandy clay; extended trench-wide; encountered 1.40m ground level. Underlies (1803)
	INTERPRETATION:	*Natural geology*
RESULTS: No significant archaeology		

Plate 42: View to the E of Trench 18

Plate 43: View to the W of Trench 18

5.19 Trench 19

The trench measured 4m (NW/SE) × 4m (NE/SW), with a 3m extension running NE of the trench measuring 3m (NE/SW) × 1m (NW/SE), and attained a maximum depth of 1.3m (*Plate 44*).

Plate 44: View to the E of Trench 19

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 59470 72378 Pedestrian footpath opposite Temple Gate SE of Temple Meads Station	(1900)	Indurated, dark grey tarmac; extended trench-wide; average thickness 0.22m. Overlies (1901)
	INTERPRETATION:	*Tarmac surface*
	(1901)	Indurated, light grey concrete; extended trench-wide; average thickness 0.33m; encountered 0.22m below ground level. Overlies (1902), underlies (1901)
	INTERPRETATION:	*Associated bedding layer*
	(1902)	Friable, dark brown silt; moderate gravels of < 0.05m & brick fragments; encountered trench-wide; average thickness 0.51m; encountered 0.55m below ground level. Underlies (1901)
	INTERPRETATION:	*Made-ground deposit*
RESULTS: No significant archaeology		

5.20 Test Pit (TP) 20

A test pit (*Plate 45*) measuring 1m × 1m × 0.63m was opened to locate the 19th -century water main.

LOCATION	CONTEXT	DESCRIPTION
NGR: ST59582 72231 Grassed area opposite Temple Meads immediately NW of the Bath Bridge Roundabout	(2001)	Friable, mid red sandy silt; moderate pebbles; average thickness 0.08m. Overlies (2002)
	INTERPRETATION:	*Topsoil*
	(2002)	Firm, light red sandy silt; occasional stones; encountered 0.08m below ground level; average thickness 0.35m. Underlies (2001), overlies (2003)
	INTERPRETATION:	*Landscaping layer*
	(2003)	Cemented, grey concrete; encountered 0.43m below ground level; average thickness 0.2m to limit of excavation. Underlies (2002)
	INTERPRETATION:	*Concrete foundation*
RESULTS: No significant archaeology		

Plate 45: View to the NE of TP 20

5.21 Trench 21

The trench (*Plate 46*) measured 2.30m (NW/SE) × 3.50m (NE/SW) × 1.29m (maximum depth) and exposed a valve connection. A later extension connected Trench 1 and Trench 21 measuring 2m (NE-SE) × 0.5m (NW/SE) × 1.45m (maximum depth).

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 58927 73374 The Haymarket 2m SE of Trench 1	(2100)	Indurated, dark grey tarmac; extended trench-wide; average thickness 0.05m. Overlies (2101)
	INTERPRETATION:	*Tarmac surface*
	(2101)	Indurated, light grey concrete; extended trench-wide; average thickness 0.69m; encountered 0.05m below ground level. Underlies (2100) , overlies (2101)
	INTERPRETATION:	*Associated bedding layer*
	(2102)	Friable, mid brown red silt; occasional sub-angular stones <100mm; encountered trench-wide; average thickness 0.55m to the limit of excavation; encountered 0.74m below ground level. Underlies (2101)
	INTERPRETATION:	*Levelling layer over the C19 water mains*
RESULTS: No significant archaeology		

Plate 46: View to the SW of Trench 21

5.22 Trench 22

The trench (*Plate 47 & 48*) measured 11m (NW/SE) × 2.05m (NE/SW) × 1.40m (maximum depth) and was excavated to locate the 19th -century main.

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 58184 73121 Park Row opposite the 'Society of Merchant Venturers of Bristol' building on the route of the C19 main.	(2200)	Indurated, dark grey tarmac; extended trench-wide; average thickness 0.09m. Overlies (2201)
	INTERPRETATION:	*Tarmac surface*
	(2201)	Indurated, light grey concrete; extended trench-wide; average thickness 0.35m; encountered 0.09m below ground level. Underlies (2200), overlies (2202)
	INTERPRETATION:	*Associated bedding layer*
	(2202)	Firm, light red brown clay; frequent sub-angular stones of <90mm; extended trench-wide; average thickness 0.60m; encountered 0.44m below ground level. Underlies (2201), overlies (2203)
	INTERPRETATION:	*Levelling layer over C19 mains*
	(2203)	Soft, light grey limestone mortar; extended NW/SE along SW edge of trench; average thickness 0.14m; encountered 0.88m. Underlies (2202), overlies (2204)
	INTERPRETATION:	*Limestone mortar*
	(2204)	Masonry; linear in plan; tightly packed rough-hewn brick construction, size of materials: <350mm × 240mm (width unknown); no visible bonding material; extended 11m (NW/SE) along W edge of trench; maximum thickness 0.24m; encountered 1.02m below ground level. Underlies (2203), overlies (2205)
	INTERPRETATION:	*Former road surface. Stones placed directly on to a possible levelling layer (2205) with no visible construction cut*
	(2205)	Soft, mid orangey-brown sandy clay; frequent sub-angular stones of <100mm; extended trench-wide; average thickness 0.1m to limit of excavation; encountered 1.26m below ground level. Underlies (2204)
	INTERPRETATION:	*Made-ground deposit*
RESULTS: The masonry surface (2204) was only visible in the section of the trench as it had been truncated by the C19 mains trench		

5.22.1 Discussion

The former road surface (2204) (*Plates 47-8; fig. 17*) is potentially that extant at the time of Ashmead's 1828 map, which shows Park Row as following a slightly narrower alignment than that of the modern road.

Plate 47: View to the SE of Trench 22

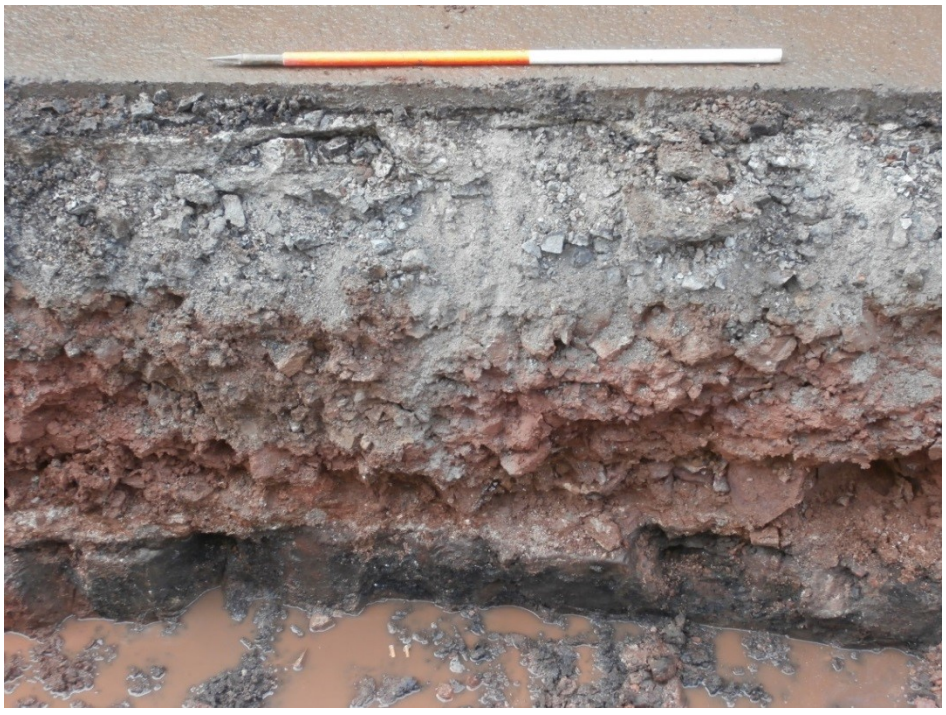


Plate 48: View to the SW showing the SE-facing elevation of road (2204)

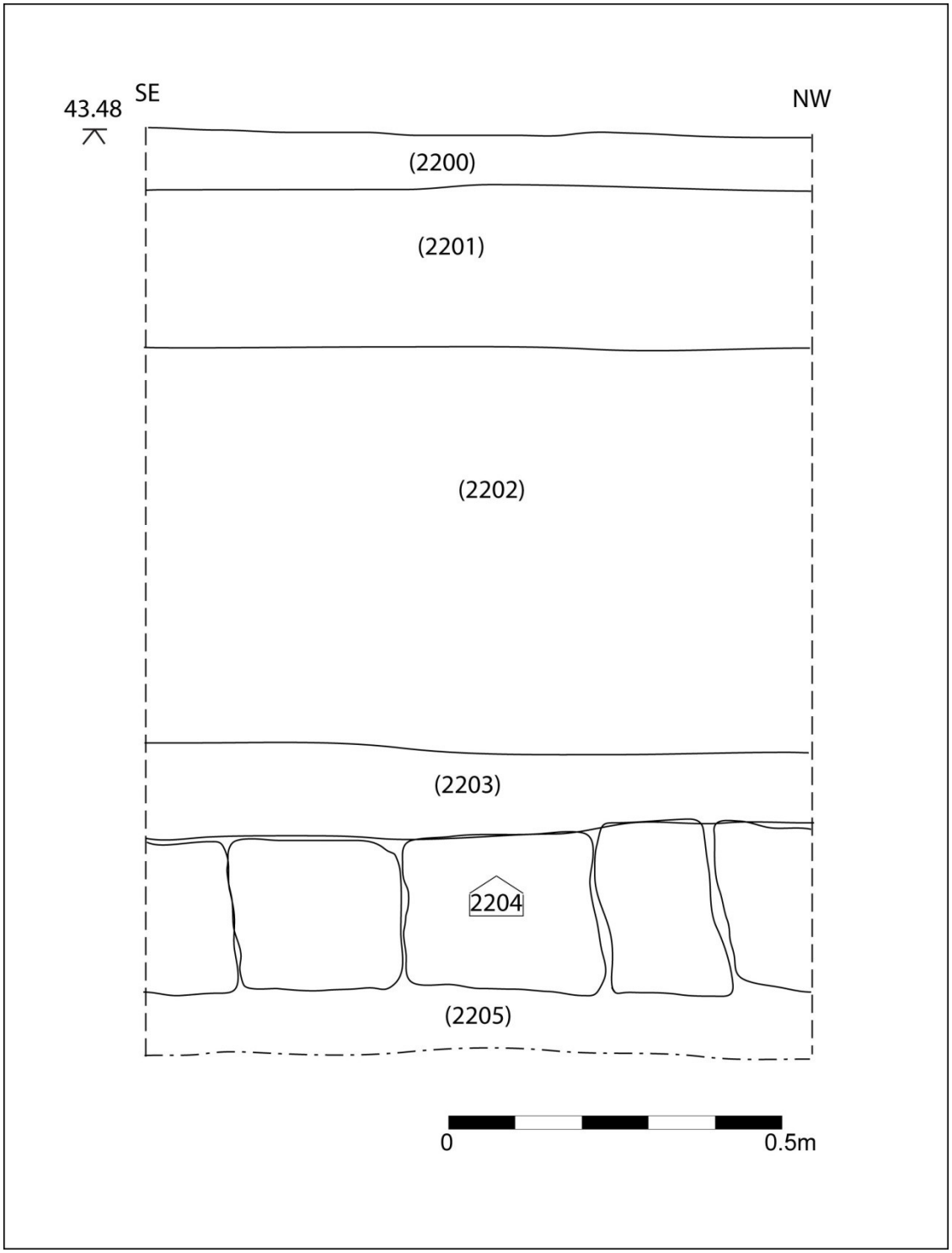


Fig. 17: Representative section showing former road surface (2204)

5.23 Trench 23

Trench 23 (*Plate 49*) was located in a grassed area of Castle Park, to the W of the paved area associated with St. Peter's Church and SE of the pedestrian underpass. The trench measured 3m (NNW/SSE) × 0.8m (ENE/WSW) × 1.4m (maximum depth). There was no significant archaeology present, although demolition material associated with the former properties of Bridge Street was identified

	CONTEXT	DESCRIPTION
NGR: ST 59077 73070 Located in Castle Park within the paved area to the W of St. Peter's Church, on the line of the former Dolphin Street.	(2300)	Loose, mid-brown sandy silt; occasional small stones; extended trench-wide with an average thickness of 0.32m. Overlies (2301)
	INTERPRETATION:	*Topsoil*
	(2301)	Loose, mottled brown, black and orange silty sand and grit; frequent small to medium brick rubble and stones; extended trench-wide, average thickness 0.06m. Underlies (2300), overlies (2302)
	INTERPRETATION:	*Demolition material associated with post WWII clearance and 1970s landscaping*
	(2302)	Loose, mid-orange red sand & small to medium sandstone fragments; moderate small to medium brick rubble and stone inclusions; extended trench-wide, average thickness 0.8m. Underlies (2301), overlies (2303)
	INTERPRETATION:	*Mixed re-deposited natural made-ground & demolition material associated with post WW2 clearance*
	(2303)	Loose, mid-grey grit & small stones; no inclusions; visible extent 0.8m (E/W) × 0.5m (N/S) × >0.2m Underlies (2302)
	INTERPRETATION:	*Backfill around water main*
RESULTS: See discussion below		

5.23.1 Discussion

It is likely that the re-deposited natural sand comprising the principal component of layer (2302) originally formed either the existing ground level or, as is more likely, that it was a made-ground deposit associated with the construction of Bridge Street and the widening of Dolphin Lane (which is known from archaeological and

documentary records to have already been well established by the 13th century (Neale, 2000)), both in the 1760s. This material has, however, been heavily disturbed by the insertion of a water main, post-Second World War demolition and clearance and the landscaping of Castle Park in the 1970s. The brick and stone rubble material present in both (2301) and (2302) was also associated with these events, originating from the demolition of the 18th – 20th -century properties fronting Bridge Street.

Plate 49: NW-facing view of Trench 23

5.24 Trench 24

The trench (*Plate 50*) was situated 10m SW of Trench 23 and measured 2.5m (NE/SW) × 0.8m (SE/NW) × 1.2m (maximum depth). It linked with the SW extent of the Trench 25 extension.

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 59077 73056 Located in Castle Park approximately 10m SW of Trench 23	(2400)	Loose, mid- brown sandy silt; occasional small stones; extending trench-wide, average thickness 0.25m. Overlies (2401)
	INTERPRETATION:	*Topsoil*
	(2401)	Loose, light grey gravel; no inclusions; extending trench-wide, average thickness 0.1m. Underlies (2400) Overlies (2402)
	INTERPRETATION:	*Levelling layer sealing (2402)*
	(2402)	Firm, mottled brown, black & grey rubble, including brick & stone; no inclusions; extending trench-wide, average thickness >0.9m. Underlies (2401)
	INTERPRETATION:	*Demolition material associated with post WII clearance and 1970s landscaping*
RESULTS: Concentration of demolition material (discussed below)		

5.24.1 Discussion

Plate 50: NE-facing view of Trench 24 showing quantity of demolition material

The demolition material (2402) was similar to that found in Trench 23, although the rubble fragments were much larger and intact sections of mortared brickwork were also present (*Plate 50*). This larger concentration of demolition material may suggest that Trench 24 was located within the footprint of one of the properties lining Bridge Street, possibly No. 44, whilst Trench 23 may have been within the former line of the street.

5.25 Trench 25

The trench measured 33m (NW/SE) × 0.75m (NE/SW) × 1m (maximum depth) (*Plates 51-3)*.

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 59084 73071 (S); ST 59040 73084 (C); ST 59079 73098 (N) Located in the paved area of Castle Park to the W of St. Peter's church. The trench was subsequently extended to run NE/SW between NGR: ST59084 73071 (NE) and NGR: ST 59075 73061 (SW), at which point it linked with Trench 24. It was within this extension that feature (2521) was located	(2500)	Compact, dark greyish-brown brick, light grey mortar; no inclusions; visibly extending 12m (N/S) × 0.7m (E/W) × 0.06m (average thickness). Overlies (2501) Abuts (2512)
	INTERPRETATION:	*Modern brick surface*
	(2501)	Friable, pale yellow sand; no inclusions; extending trench-wide at an average thickness of 0.3m. Underlies (2500) (2512) Overlies (2502)
	INTERPRETATION:	*Bedding deposit for (2500) and (2512)*
	(2502)	Indurated concrete; no inclusions; extending trench-wide at an average thickness of 0.2m. Underlies (2501) Overlies (2503)
	INTERPRETATION:	*Concrete surface, possibly associated with post-WWII use as car park*
	(2503)	Friable, pale yellow sand; no inclusions; extending trench-wide at an average thickness of 0.35m. Underlies (2502) Overlies (2504) (2513)
	INTERPRETATION:	*Bedding/levelling deposit between concrete surfaces (2502) and (2504)*
	(2504)	Indurated concrete; no inclusions; visibly extending 10m (N/S) × 0.7m (E/W) × 0.2m (average thickness). Underlies (2503) Overlies (2505)
	INTERPRETATION:	*Concrete surface*
	(2505)	Loose, black sandy silt; frequent small brick fragments & stones; visibly extending 11m (N/S) × 0.7m (E/W) × 0.2m (average thickness). Underlies (2504) Overlies (2506)
	INTERPRETATION:	*Made-ground deposit, disturbed by post-WWII clearance and 1970s landscaping*
	(2506)	Loose, mottled orange/red/brown sandy silt; frequent small stones and CBM; visibly extending 11m (N/S) × 0.7m (E/W) × 0.2m (average thickness). Underlies (2505) Overlies (2507)
	INTERPRETATION:	*Made-ground deposit, disturbed by post-WWII clearance and 1970s landscaping*

LOCATION	CONTEXT	DESCRIPTION
	(2507)	Loose, mottled mid-brown/black clayey silt; frequent small stone; visibly extending 11m (N/S) × 0.7m (E/W) × >0.25m (average thickness). Underlies (2506) Overlies 2508 2510 2511
	INTERPRETATION:	*Made-ground deposit, disturbed by post-WWII clearance and 1970s landscaping*
	(2508)	Compact, grey sandstone; no inclusions or bonding; roughly worked; visibly extending 2m (N/S) × 1.5m (E/W) × 0.1m (average thickness). Underlies (2507) Overlies 2509
	INTERPRETATION:	*Capstones for brick chamber (2509)*
	(2509)	Compact, mid orange-red bricks; average dimensions of 230mm × 100mm × 60mm; light grey mortar bonding; visibly extending 2m (NW/SE) × 1.5m (NE/SW) × 1m. Underlies 2508
	INTERPRETATION:	*Brick chamber, possibly drainage channel access*
	(2510)	Compact, pink sandstone; c. 100-700mm in dimension; light pink mortar bonding; unworked; random un-coursed construction; approximately four visible courses; visibly extending 1.1m (NW/SE) × 0.75m (NE/SW) at a depth of >0.45m. Underlies (2505) Abutted by (2506) (2507
	INTERPRETATION:	*Probable wall forming structure relating to well (2518)*
	(2511)	Compact, grey sandstone; c. 100-900mm in dimension; mid-grey mortar bonding with charcoal inclusions; unworked; not built to courses; visibly extending 1.15m (NW/SE) × 0.75m (NE/SW) at a depth of >0.225m. Underlies (2507) Overlies 2518
	INTERPRETATION:	*Capping material associated with well (2518)*
	(2512)	Compact, mid grey sandstone; no inclusions; visibly extending 19m (N/S) × 0.7m (E/W) × 0.1m (average thickness). Overlies (2501) Abutted by (2500)
	INTERPRETATION:	*Modern paved surface of possibly earlier re-used flagstones*
	(2513)	Indurated tarmac; no inclusions; visibly extending 20m (N/S) × 0.7m (E/W) ×

LOCATION	CONTEXT	DESCRIPTION
		0.1m (average thickness). Underlies (2503) Overlies (2514)
	INTERPRETATION:	*Tarmac surface, possibly relating to post-WWII usage as car park or original surface of Dolphin Street*
	(2514)	Indurated concrete; no inclusions; visibly extending 20m (N/S) × 0.7m (E/W) × 0.1m (average thickness). Underlies (2513) Overlies (2515)
	INTERPRETATION:	*Concrete hardcore for surface (2513)*
	(2515)	Indurated tarmac; no inclusions; visibly extending 20m (N/S) × 0.7m (E/W) × 0.1m (average thickness). Underlies (2514) Overlies (2516)
	INTERPRETATION:	*Tarmac surface, possibly relating to post-WWII usage as car park or original surface of Dolphin Street*
	(2516)	Indurated concrete; no inclusions; visibly extending 20m (N/S) × 0.7m (E/W) × 0.15m (average thickness). Underlies (2515) Overlies (2517)
	INTERPRETATION:	*Concrete hardcore for surface (2515)*
	(2517)	Loose, mottled black/mid-brown sandy silt; frequent medium rubble, brick & stones; visibly extending 20m (N/S) × 0.7m (E/W) × >0.3m (average thickness). Underlies (2516)
	INTERPRETATION:	*Made-ground deposit, disturbed by post-WWII clearance and 1970s landscaping*
	(2518)	Masonry; unknown construction & dimensions, depth 23m. Underlies (2511)
	INTERPRETATION:	*Stone-lined well shaft*
	(2519)	Soft, mid reddish-brown clayey silt; extended 7m (NE/SW) × 2m (NW/SE), maximum depth 0.18m. Underlies (2519), overlies (2520)
	INTERPRETATION:	*Subsoil*
	(2520)	Friable, dark red/greyish-brown silt; moderate large stones, occasional charcoal flecks; extended 7m (NE/SW) × 2m (NW/SE) × 1.3m (maximum depth). Underlies (2519), overlies (2521)
	INTERPRETATION:	*Made-ground deposit overlying water main service*
	(2521)	Masonry; rough-hewn stone; cement bonding; no regular coursing visible;

LOCATION	CONTEXT	DESCRIPTION
		corner or structure surviving aligned N/S and E/W; measured as found 0.88m (N/S) × 1.18m (E/W) × 0.26m (maximum width) × 0.36m; encountered 1.6m below ground level. Underlies (2520), overlies (2522)
	INTERPRETATION:	*Structure - wall foundation*
	(2522)	Friable, mid reddish-brown sandy silt; no inclusions; encountered 1.6m below ground level at the limit of excavation; extended trench-wide. Underlies (2521)
	INTERPRETATION:	*Natural geology*
	(2523)	Soft, mid brown clayey silt; occasional small stones; extended 7m (NE/SW) × 2m (NW/SE) × 0.25m (maximum depth). Overlies (2519)
	INTERPRETATION:	*Topsoil*
RESULTS: Remains of possible well identified at NGR: ST 59082 73091 (discussed below)		

5.25.1 Discussion

The made-ground deposits (2505) (2506) (2507) and (2517) appeared to relate to the widening of Dolphin Street in the mid-1770s. As was the case in Trench 23 and Trench 24, these deposits had also been disturbed by post-Second World War clearance activity and subsequent landscaping.

Several masonry structures were present at the base of the trench, full investigation of these being precluded due to health and safety considerations. The brick chamber (2509) (*Plate 51*) and associated capping stones (2508) are considered to be of a late 19th -or 20th -century date, comprising a roughly square access chamber of 1.5-2m width leading into a tunnel or channel that appeared to have been blocked, presumably at a later date. Unlike the chamber, the tunnel possessed an arched roof and it was narrower, with what appeared to be a concrete floor, although this could not be confirmed by investigation.

Circumstances were such that it was not possible to ascertain whether the wall visible at the rear of the photograph represented later blocking material or formed part of the original construction. It should be noted, however, that the rear wall did not display the whitewashed brickwork evident in the main chamber.

Plate 51: SE facing view of (2509)

Although the precise function of this structure was unclear, its alignment running beneath the course of Dolphin Street in the direction of the river may indicate a drainage feature. However, if its present dimensions reflect its original extent, this structure may represent a small storage area forming part of the cellarage associated with properties situated on the course of Dolphin Street, although the absence of any clear means of access, together with the differences in terms of construction previously noted suggest this interpretation is rather less likely.

The probable capping material (2511) sealed well (2518), which was inaccessible at the time of recording and was subject only to very limited investigation by means of a small void. The feature was found to be some 23m deep and appeared to be of solid construction. The capping material (2511) itself covered an area of approximately 1.15m (NW/SE) × >0.75m (NE/SW); however, due to truncation resulting from the installation of a gas main, it was unclear whether these dimensions accurately reflected those of the underlying well structure.

Based upon documentary evidence (Boucher 1939), it can be established that (2518) is situated in close proximity to the site of 'St. Edith's Well', which is first mentioned in a documentary reference of 1391 (and later known as 'St. Peters Pump'), and a second well shaft excavated in 1766 slightly to the E. The substantial nature of (2518) together with its depth indicate that it is almost certainly one of these wells and based on the grid reference obtained for its location, it would appear more likely that it relates to the mid-18th -century well, rather than its medieval predecessor.

Structure (2510), which again had been truncated during gas-main installation, appeared to be a wall of relatively crude construction comprising unworked and un-coursed masonry, which attained a width of >1.1m (NW/SE). It would appear likely that (2510) was associated with the well (2518) and may possibly represent either a superstructure or perhaps part of an adjoining building formerly fronting onto Dolphin Street. However, the gas

main had removed any evidence of a relationship and the precise nature of the masonry structure remains unclear (*Plate 52*).

Plate 52: View NE of the SW-facing section of Trench 25 showing (2510) to the W and (2511) to the E of the gas main

Plate 53: View SW of wall foundation (2521)

5.26 Trench 26

The trench measured 19m (NE/SW) × 3.8m (NW/SE) × 2m (maximum depth) (*Plates 54* & 55).

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 59105 73043 Located along the SE extent of Castle Park running parallel to the Floating Harbour	(2600)	Soft, mid orange mottled reddish-brown silty clay; encountered trench-wide, maximum thickness 0.1m. Overlies (2601)
	INTERPRETATION:	*Topsoil/Turf*
	(2601)	Soft, mid greyish-brown sandy, gritty silt; frequent sub-angular stones, brick & mortar fragments; encountered 0.1m below ground level; extending trench-wide, maximum thickness of 1.5m to limit of excavation. Underlies (2600)
	INTERPRETATION:	*Made-ground deposit overlying services*
RESULTS: No significant archaeology present		

Plate 54: View to the SW of Trench 26, trench location shot

Plate 55: View to the SE, working shot of 26 showing exposed services

5.27 Trench 27

The trench measured 5m (E/W) × 3.5m (N/S) × 2m (maximum depth) (*Plates 56* & 57).

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 59116 73048 Located on the SE side of Castle Park, running partially across the Southern footpath leading to St. Peters Church	(2700)	Indurated, black tarmac; encountered trench-wide, maximum thickness of 0.07m. Overlies (2701)
	INTERPRETATION:	*Tarmac surface*
	(2701)	Compact, light grey gravel; encountered 0.07m below ground level; extending trench-wide, maximum thickness of 0.15m. Underlies (2700), overlies (2702)
	INTERPRETATION:	*Bedding layer for (2700)*
	(2702)	Friable, mid reddish-brown sandy silt; frequent sub-angular stones & brick fragments; encountered 0.22m below ground level; extending trench-wide, maximum thickness 1.78m to limit of excavation. Underlies (2701)
	INTERPRETATION:	*Made-ground deposit overlying services*
RESULTS: No significant archaeology present		

Plate 56: View to the N of Trench 27

Plate 57: View to the N showing location of Trench 27

5.28 Trench 28

The trench measured 5.6m (NE/SW) × 4m (NW/SE) × 3m (maximum depth) (*Plates 58 & 59*).

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 59116 73048 Located SW of trench 27 running parallel to the Floating harbour	(2800)	Soft, mid brown clayey silt; occasional stones < 0.1m; extending trench-wide, maximum depth 0.35m. Overlies (2801)
	INTERPRETATION:	*Topsoil*
	(2801)	Friable, light brown sandy clay; extended trench-wide, maximum thickness 0.33m. Underlies (2800), overlies (2802)
	INTERPRETATION:	*Levelling layer*
	(2802)	Friable, mid greyish-brown sandy silt; frequent large stones, moderate brick fragments; extended trench-wide, maximum depth 2.25m to limit of excavation. Underlies (2801)
	INTERPRETATION:	*Made-ground deposit*
RESULTS: No significant archaeology present		

Plate 58: View to the W of Trench 28

Plate 59: View to the NE of Trench 28

5.29 Trench 29

The trench measured 9.02m (NE/SW) × 3.5m (NW/SE) × 2.26m (maximum depth) (*Plates 60 & 61, figs. 18 & 19*).

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 59018 72991 Located at the NE end of Bridge Street, continuing into grassed park area	(2900)	Indurated, black tarmac; extending 2.86m (E/W) × 3.5m (N/S) × 0.06m (maximum depth). Overlies (2901)
	INTERPRETATION:	*Road surface*
	(2901)	Indurated, light grey concrete; extending 2.86m (E/W) × 3.5m (N/S) × 0.12m (maximum depth). Underlies (2900), overlies (2902)
	INTERPRETATION:	*Concrete bedding layer for (2900)*
	(2902)	Indurated, light grey concrete; extending 2.86m (E/W) × 3.5m (N/S) × 0.22m (maximum depth). Underlies (2901), overlies (2903)
	INTERPRETATION:	*Concrete foundation layer*
	(2903)	Friable, dark greyish-brown sandy silt; moderate gravel, occasional charcoal; extending 1.92m (E/W) × 3.5m (N/S) × 0.22m (maximum depth). Underlies (2902), overlies (2904)
	INTERPRETATION:	*Levelling layer overlying service*
	(2904)	Friable; mid reddish-brown sandy silt; moderate sub-angular stones & brick fragments; extending 6.2m (E/W) × 3.5m (N/S) × 1.06m (maximum depth). Underlies (2903) & (2909), overlies (2905) and (2910)
	INTERPRETATION:	*Landscaping layer*
	(2905)	Friable; light yellowish-grey limestone mortar; extending 1.94m (E/W) × 0.16m (maximum depth). Underlies (2904), overlies (2906)
	INTERPRETATION:	*Limestone mortar*
	(2906)	Masonry (visible only in the SE-facing section); aligned NE/SW; rough-hewn stone blocks measuring < 340mm × 220mm × 210mm; limestone mortar; dimensions as found 5.6m (NE/SW) × 1.54m (maximum depth). Underlies (2907), (2911), (2912), (2905) & (2910)
	INTERPRETATION:	*Stone-built arched structures forming cellarage relating to former properties along the S extent of Bridge Street*

LOCATION	CONTEXT	DESCRIPTION
	(2907)	Friable, grey silt; very frequent rubble & charcoal fragments; extending 1.6m (E/W) × 0.55m (N/S) × 1.2m.
	INTERPRETATION:	*Rubble backfill of arched structure (2906), probably dating to post-WWII landscaping of Castle Park area*
	(2908)	Soft, mid reddish-brown clayey silt; occasional small stones; extending 3.7m (E/W) × 3.5m (N/S) × 0.28m (maximum depth). Overlies (2909)
	INTERPRETATION:	*Topsoil*
	(2909)	Friable, mid grey sand; very frequent gravel; extending 3.2m (E/W) × 3.5m (N/S) × 0.1m (maximum depth). Underlies (2908), overlies (2904)
	INTERPRETATION:	*Gravel hardcore*
	(2910)	Friable, mid greyish-brown sandy silt; very frequent large stones <250mm; extending 2.56m (E/W) × 0.5m (N/S) × 0.7m. Underlies (2904), overlies (2906)
	INTERPRETATION:	*Demolition layer, probably relating to post-WWII demolition & landscaping*
	(2911)	Indurated, light grey concrete; extending 2.06m (E/W) × 0.7m (N/S) × 1.28m (maximum depth). Same as (2912)
	INTERPRETATION:	*Concrete backfill of arched structure (2906)*
	(2912)	Indurated, light grey concrete; extending 1.58m (E/W) × 0.5m (N/S) × 1.30m (maximum depth). Same as (2911)
	INTERPRETATION:	*Concrete backfill of arched structure (2906)*
RESULTS: Remains of cellarage identified (discussed below)		

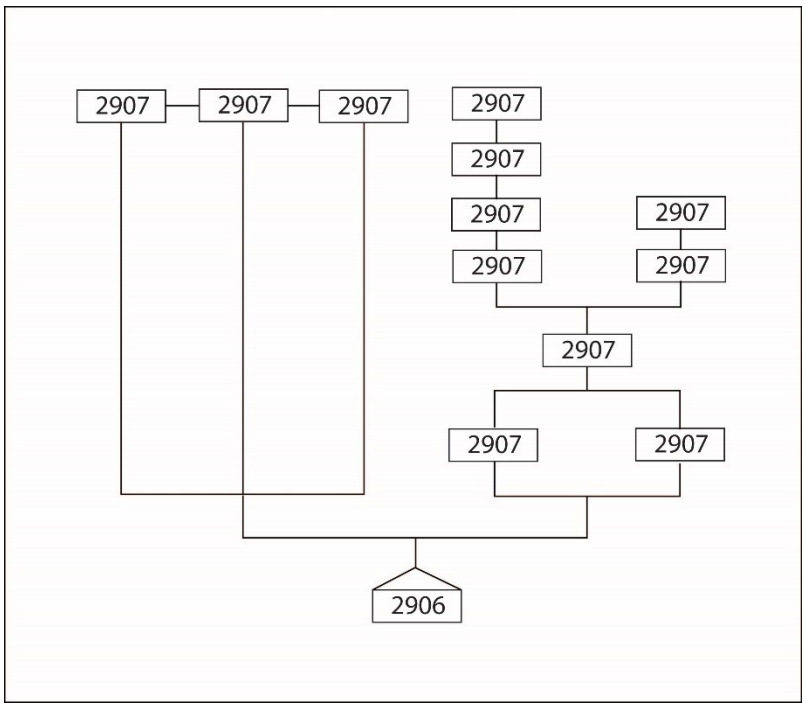


Fig. 18: Matrix for Trench 29

5.29.1 Discussion

Trench 29 revealed the masonry remains of vaulted cellarage (2906) constructed from rough-hewn stone bonded with a light grey lime mortar containing charcoal flecks (*Plates 60-1*; *fig. 19*). The construction material is very similar to that used in the construction of cellarage (3011) excavated in Trench 30, suggesting these structures are probably contemporary. Comparison of Ashmead's plan of 1874 with the OS 2013 map would suggest that the cellarage related to the former property at No 16 located on the southern extent of Bridge Street, which was built *c*. 1760 and demolished after the Second World War.

Assessment of the mortar sample taken from (2906) suggests pre-industrial or low-level mortar production in a clamp kiln or continuous draw kiln using wood as a fuel during the lime-burning process. This type of kiln resulted in the lime being intermixed with the fuel residue when it was raked, which would account for the evidence of charcoal flecking identified within the mortar (see Appendix 4).

The arched structures had been backfilled with rubble (2907) and concrete (2911) and (2912) precluding further investigation.

.

Plate 60: View to the NW of arched structure (2906) in Trench 29

Plate 61: View to the N of arched structure (2906) in Trench 29

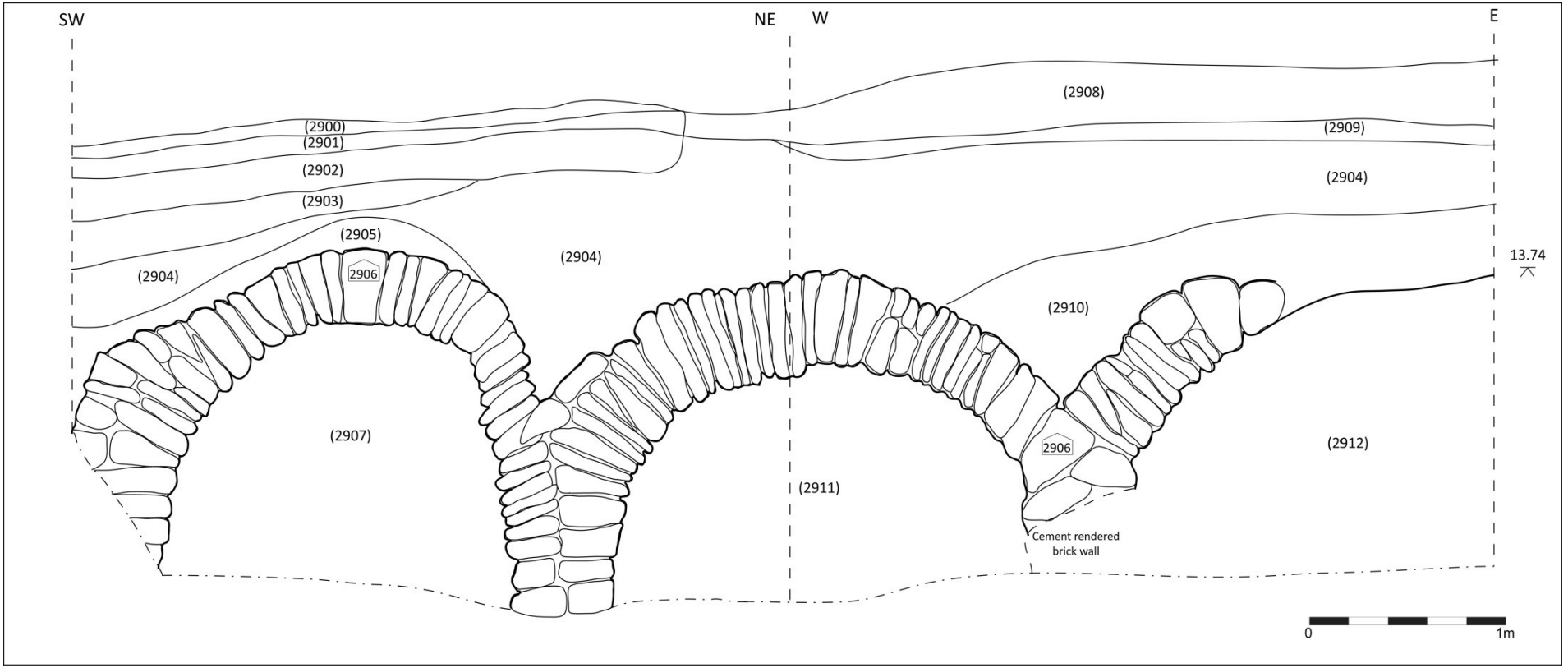


Fig. 19: SE-facing section of Trench 29

5.30 Trench 30

The trench measured 6.65m (NE/SW) × 2.45m (NW/SE) × 1.98m (maximum depth) (*Plates 62 & 63, fig. 20*).

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 58995 72969 Located along the Southern extent of Bridge Street in the footpath	(3000)	Indurated, light grey concrete; extending trench-wide, maximum thickness 0.1m. Overlies (3001)
	INTERPRETATION:	*Concrete surface*
	(3001)	Indurated, light grey concrete; extending trench-wide, maximum thickness 0.23m. Underlies (3000), overlies (3002) (3005)
	INTERPRETATION:	*Concrete bedding layer for (3000)*
	(3002)	Friable, light brownish-grey gravel; extending 0.44m (SW/NE) × 2.2m (SE/NW) × 0.58m (maximum thickness). Underlies (3001), fill of [3003]
	INTERPRETATION:	*Gravel backfill of service trench [3003]*
	[3003]	Cut; aligned SE-NW; extending 0.44m (SW/NE) × 2.20m (SE/NW) × 0.58m (maximum depth). Filled by (3002), cuts (3004)
	INTERPRETATION:	*Cut of service trench*
	(3004)	Soft, mid greyish-brown silt; moderate gravel & charcoal flecks; extending 1.42m (SE/NW) × 2.20m (SE/NW) × 0.20m (maximum thickness). Cut by [3003] [3006], overlies (3009)
	INTERPRETATION:	*Levelling layer*
	(3005)	Friable, light reddish-grey gravel; extending 0.5m (SW/NE) × 2.2m (SE/NW) × 0.72m (maximum thickness). Underlies (3001), fills [3006]
	INTERPRETATION:	*Gravel backfill of service trench [3006]*
	[3006]	Cut; aligned (SE/NW); extending 0.5m (SW/NE) × 2.2m (SE/NW) × 0.72m (maximum depth). Cuts (3004) (3007), filled by (3005)
	INTERPRETATION:	*Cut of service trench*
	(3007)	Soft, dark black brown clayey silt; moderate charcoal, occasional gravel; extending 1.56m (SW/NE) × 0.2m (SE/NW) × 0.44m (maximum thickness). Cut by [3006], overlies (3008)
	INTERPRETATION:	*Post-medieval levelling layer*

LOCATION	CONTEXT	DESCRIPTION
	(3008)	Soft, dark reddish-brown clayey silt; occasional gravel; extending 2.20m (SW/NE) × 0.2m (SE-NW) × 0.7m (maximum depth). Underlies (3009) (3007), overlies (3010)
	INTERPRETATION:	*Silt horizon, probably relating to the post-WWII landscaping*
	(3009)	Friable, mid greyish-brown sandy silt; frequent stones & gravel; extending 2.10m (SW/NE) × 0.20m (SE-NW) × 0.72m (maximum depth). Underlies (3004), overlies (3008)
	INTERPRETATION:	*Demolition layer, probably relating to post-WWII landscaping*
	(3010)	Soft, light yellowish-brown limestone mortar; extending 1.94m (SW/NE) × 0.24m (maximum depth). Underlies (3008), overlies (3011)
	INTERPRETATION:	*Limestone mortar overlying structure (3011)*
	(3011)	Masonry (visible only in the SE-facing section); aligned NE/SW; rough-hewn stones measuring < 300mm × 420mm × 250mm; limestone mortar; dimensions as found 3.62m (NE/SW) × 0.72m (maximum depth). Underlies (3012), (3013) & (3010)
	INTERPRETATION:	*Stone-built arched structures forming part of cellarage relating to former properties along the S extent of Bridge Street*
	(3012)	Friable, mid reddish-brown sandy silt; frequent crushed brick & rubble <200mm; extending 1.54m (SW/NE) × 0.2m (SE-NW) × 0.62m (maximum depth). Same as (3013)
	INTERPRETATION:	*Post-WWII rubble backfill of structure (3011)*
	(3013)	Friable, mid reddish-brown sandy silt; frequent crushed brick & rubble <200mm; extending 1.28m (SW/NE) × 0.2m (SE-NW) × 0.46m (maximum depth). Same as (3012)
		Post-WWII rubble backfill of structure (3011)
RESULTS: Remains of cellarage revealed (discussed below)		

5.30.1 Discussion

Comparison of Ashmead's 1874 plan with the 2013 Ordnance Survey map would appear to suggest that the remains of the vaulted cellarage (3011) (*Plate 62*; *fig. 20*) probably relate to former property at No 23/24 on the southern extent of Bridge Street, which dates from *c.* 1760 (Leech 1998) and was demolished after the Second World War. Similarities in terms of construction methodology and building materials would suggest (3011) and (2906) were contemporary.

Plate 62: View to the NW of arched structure (3011) in Trench 30

Plate 63: View to the N of Trench 30

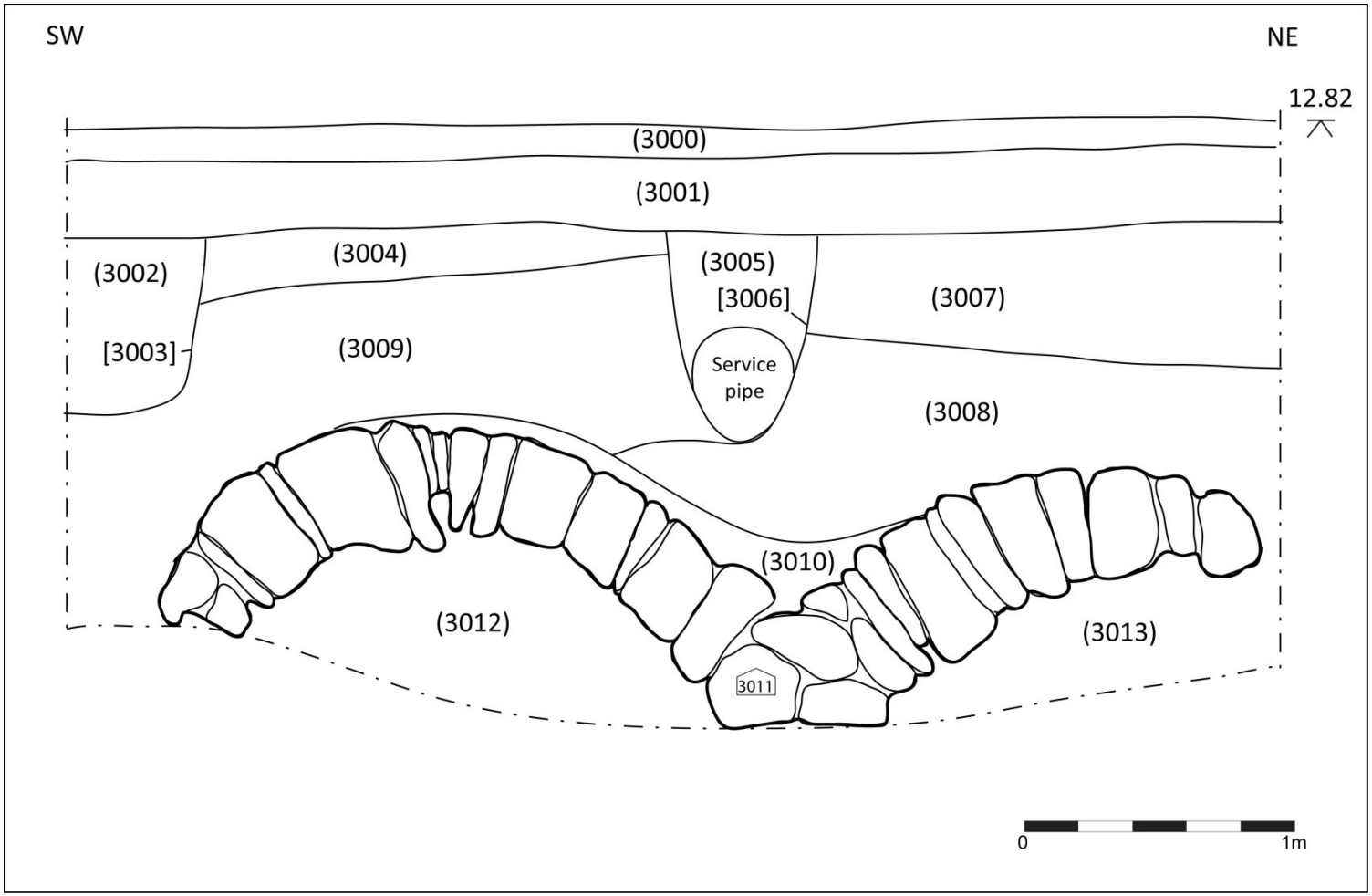


Fig. 20: S-facing section of Trench 30

5.31 Trench 31

The trench measured 2.5m (NE/SW) × 4m (NW/SE) × 2.3m (maximum depth) (*Plates 64 & 65*).

Plate 64: View to the S of Trench 31

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 59042 72993 Located NE of trench 27 on the opposite side of the footpath in the grassed area	(3100)	Soft, mid greyish-brown clayey silt; occasional small stones; extending trench-wide, maximum thickness 0.31m. Overlies (3101)
	INTERPRETATION:	*Topsoil*
	(3101)	Soft, mid reddish-brown silty clay; occasional small stones; extending trench-wide, maximum thickness 0.05m. Underlies (3100), overlies (3102)
	INTERPRETATION:	*Subsoil*
	(3102)	Friable, light reddish-brown sandy silt; moderate brick fragments & rubble; extending trench-wide, maximum

LOCATION	CONTEXT	DESCRIPTION
		thickness 1.8m to limit of excavation. Underlies (3101)
	INTERPRETATION:	*Landscaping layer overlying and surrounding original main*
RESULTS: No significant archaeology present		

Plate 65: View to the NW showing location of Trench 31

5.32 Trench 32

The trench measured 2.8m (NE/SW) × 12.40m (NW/SE) × 2.60m (maximum depth) (*Plate 66-75, figs. 21 & 22*).

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 59062 73112 Located in Castle Park incorporating previously excavated Trench 5 and Trench 6.	(3200)	Soft, mid brown clayey silt; occasional small stones; extended trench-wide, maximum thickness 0.56m. Overlies (3201)
	INTERPRETATION:	*Topsoil*
	(3201)	Indurated, light grey concrete; extended trench-wide, maximum thickness 0.32m. Underlies (3200), overlies (3202)
	INTERPRETATION:	*Former concrete surface*
	(3202)	Friable, light orange/reddish-brown clayey silt; frequent rubble & brick fragments; extended trench-wide , maximum depth 1.46m. Underlies (3201), overlies (3203) and (3206)
	INTERPRETATION:	*Made-ground/demolition layer*
	(3203)	Masonry; rough-hewn stones measuring < 520mm × 420mm × 400mm; cement bonding; irregular coursing; aligned NW/SE and NE/SW; extending 5.13m (NW/SE) × 1.17m (NE/SW) × 1.04m (maximum height). Underlies (3202)
	INTERPRETATION:	*Structure comprising C18/C19 basement level of a former property situated on Dolphin Street*
	(3204)	Friable, pale yellowish-white plaster; extending 3.34m × 0.96m × 0.02m (maximum thickness). Overlies wall (3203)
	INTERPRETATION:	*Wall plaster covering internal extent of wall (3203)*
	(3205)	Friable, mid reddish-brown silt; frequent rubble; extended 1.14m (NW/SE) × 0.9m (NE/SW) × 1.36m (maximum thickness).
	INTERPRETATION:	*Silt and rubble deposit between structures (3203) and (3206)*
	(3206)	Structure, constructed from roughly hewn stones measuring 480mm × 380mm × 410mm; cement bonding; no visible coursing pattern; aligned NW/SE and NE/SW; extending 6.6m (NW/SE) × 1.58m (NE/SW) with a maximum height 1.7m.

LOCATION	CONTEXT	DESCRIPTION
	INTERPRETATION:	*C18/C19 basement level of a former property situated on Dolphin Street*
	(3207)	Friable, pale yellowish-white plaster; extended 2.9m × 1.3m × 0.02m (maximum thickness). Overlies wall (3206)
	INTERPRETATION:	*Wall plaster covering internal extent of wall (3206)*
	(3208)	Friable, pale yellowish-white plaster; extended 1.5m × 1.46m × 0.02m (maximum thickness). Overlies wall (3206)
	INTERPRETATION:	*Wall plaster covering internal extent of wall (3206)*
	(3209)	Masonry; brick; viewed only from above due to trench instability. Underlies (3202)
	INTERPRETATION:	*C19/C20 brick culvert*
RESULTS: Substantial foundation structures identified (discussed below)		

5.32.1 Discussion

Trench 32 was excavated over Trench 5 and Trench 6 but extended the trenching further to the NW. The extension revealed substantial foundation structures (3203) and (3206) (*Plate 71*) relating to two properties situated on the former Dolphin Street frontage, separated by rubble and silting (3205).

Structure (3203) (*Plate 70 & 75)*) was aligned NW/SE and was truncated to the NE by the trunk main excavations. Access steps leading down into the cellar were visible in the NW corner of the trench. Ironwork incorporated into the bottom step suggested an internal door fitting. A small recess built into the wall appeared to represent a possible coal chute. Internal wall elevations were plastered, as indicated by fragmentary sections of surviving plasterwork (3204) (*figs. 21 & 22*).

Foundation (3206) (*Plate 69*) also aligned NW/SE lay to the SE of (3203). As in the case of (3203), wall (3206) bore traces of surviving plasterwork, (3207) and (3208). A small recessed area set within the wall was identified, with ironwork built into the front base; the condition of the internal plasterwork suggested the recessed area may have served either as a small grate or coal chute.

Excavation within the internal area of both properties demonstrated that any original flooring had been truncated during later infrastructure development.

Wall (3206) was truncated to the SE, with no evidence that further foundations survived *in-situ* in the baulk.

Both cellars had been truncated by the access trench excavated for the original water main to the NE of the trench. Comparison of Ashmead's 1855 plan with modern mapping would appear to identify structure (3203) with No 4 Dolphin Street and (3206) with No 2 Dolphin Street.

Assessment of the mortar sample recovered from (3203) indicated a hard, light reddish sand and lime, containing limestone nodules, with a single piece of charcoal noted in the matrix, together with moderate amounts of small rounded sandstones. The sand probably represents a mild *pozzolanic* agent to promote the setting of the mortar chemically. The material was interpreted as being of probable 18th -or early 19th -century date.

Samples of the internal wall plaster (3204) also from structure (3203) were also considered to be of roughly this date, consisting of hard, light reddish sand and lime, containing nodules of lime and larger granules of sand, faced with a very hard, predominantly white but discoloured lime sand mix. It is suggested that the internal walls may have been coated initially with a mix of sandy lime mortar similar to the bonding material. The surface finish was a harder lime plaster, probably of hydraulic lime, serving not only to create a smooth internal finish but also to seal the wall and thus dispel moisture.

Assessment of the mortar from (3206) revealed a hard, sandy lime mortar containing large quantities of coal fragments, which could have become incorporated during the burning process or, as is more likely, were deliberately added as a pozzolan. The composition of this mortar would again suggest an 18th -or early 19th -century date, as industrial materials became more frequently used for this purpose during the early Industrial period. Samples of plaster from (3206) included (3207), a fairly soft white lime and aggregate containing moderate inclusions of small coal/fuel waste pieces. This plaster was 11mm thick and appeared to have been applied directly onto the brickwork. (3208) was a plaster internal finish, also removed from wall (3206), consisting of hard, reddish/white sand lime containing frequent regular very small >0.5mm charcoal inclusions. These plaster samples were also 18th -or early 19th -century.

The results of both the mortar and plaster assessment would tend to suggest that these properties probably relate to the widening of Dolphin Street and the construction of Bridge Street carried out in the mid-1770s and which are shown on Ashmead's 1828 map, creating a new street layout that remained largely intact until after the Second World War (Leech, 1998).

Plate 66: View to the SW of steps within structure (3203)

Plate 67: View to the NW of structure (3203)

Plate 68: View to the NW of structure (3203)

Plate 69: View to the S of possible coal chute within the NW/SE aligned wall of structure (3206)

Plate 70: View to the SW of possible coal chute within the NW/SE aligned wall of structure (3203)

Plate 71: View to the SE of structures (3203) and (3206)

Plate 72: View to the NW of Trench 32

Plate 73: View to the SE of Trench 32

Plate 74: View to the SE of Trench 32

Plate 75: View to the W of structure (3203)

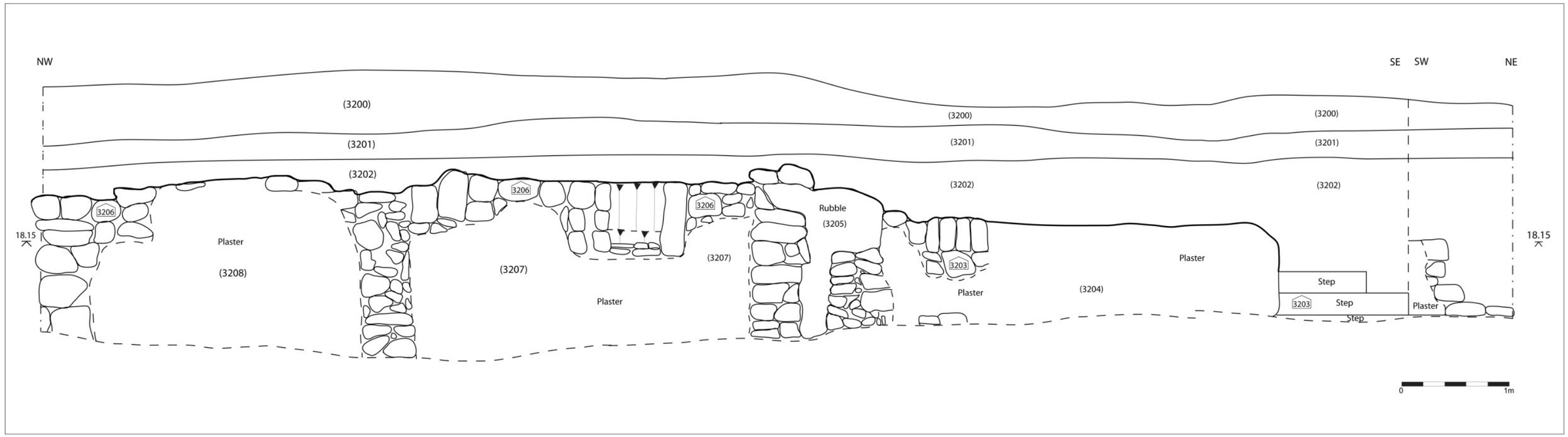


Fig. 21: Elevation of walls (3206) & (3204)

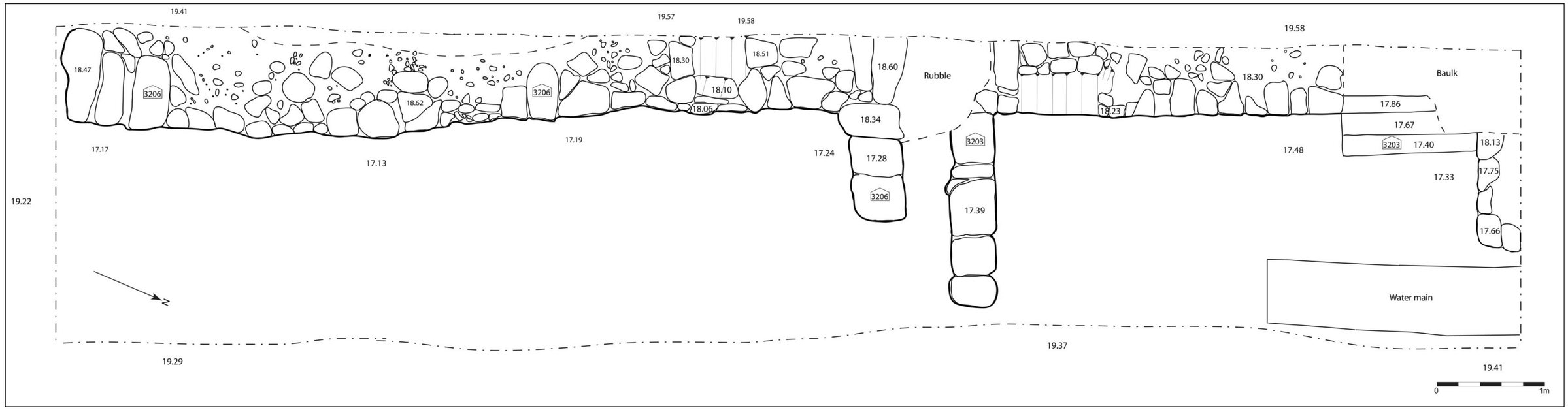


Fig. 22: Plan of walls (3206) & (3204)

5.33 Trial Hole (TH) 33

TH 33 measured 2m (NE/SW) × 0.8m (NW/SE) × 1.3m (maximum depth) (*Plate 76*).

Plate 76: View to the SE of TH 33

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 58984 72958 Located at the southern extent of Bridge Street	(3300)	Indurated, black tarmac; extended trench-wide, maximum thickness 0.06m. Overlies (3301)
	INTERPRETATION:	*Tarmac surface*
	(3301)	Indurated, light grey concrete; extended trench-wide, maximum depth 0.18m. Underlies (3300), overlies (3302)
	INTERPRETATION:	*Concrete bedding layer for (3300)*
	(3302)	Friable, mid reddish-brown sand; very frequent gravels; extended trench-wide,

LOCATION	CONTEXT	DESCRIPTION
		maximum depth 0.61m. Underlies (3301), overlies (3303)
	INTERPRETATION:	*Modern made-ground deposit*
	(3303)	Friable, dark brown clayey silt; frequent stone & crushed brick; extended trench-wide, maximum depth 0.41m to limit of excavation. Underlies (3302)
	INTERPRETATION:	*Post-WWII demolition and landscaping layer*
RESULTS: No significant archaeology present		

5.34 Trial Hole 34

TH 34 measured 2m (NE/SW) × 2m (NW/SE) × 1.41m (maximum depth).

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 58983 72932 Located on the NW side of Bristol Bridge	(3400)	Indurated, black tarmac; extended trench-wide, maximum depth 0.06m. Overlies (3401)
	INTERPRETATION:	*Tarmac surface*
	(3401)	Indurated, light grey concrete; extended trench-wide, maximum thickness 0.11m. Underlies (3400), overlies (3402)
	INTERPRETATION:	*Concrete bedding layer for (3400)*
	(3402)	Friable, light reddish-brown sand; very frequent gravels; extended trench-wide, maximum thickness 1.23m to limit of excavation. Underlies (3401)
	INTERPRETATION:	*Modern made-ground deposit*
RESULTS: No significant archaeology present		

5.35 Trial Hole 35

TH 35 measured 2.44m (NE/SW) × 2m (NW/SE) × 1.35m (maximum depth).

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 58980 72938 Located on High Street SE of the junction with Bridge Street	(3500)	Indurated, black tarmac; extended trench-wide, maximum thickness 0.06m. Overlies (3501)
	INTERPRETATION:	*Tarmac surface*
	(3501)	Indurated, grey concrete; extended trench-wide, maximum thickness 0.25m. Underlies (3500), overlies (3502)
	INTERPRETATION:	*Concrete bedding layer for (3500)*
	(3502)	Friable, light reddish-brown crushed brick & rubble; extended trench-wide, maximum thickness 0.22m. Underlies (3501), overlies (3501)
	INTERPRETATION:	*Made-ground deposit derived from crushed brick and rubble*
	(3503)	Soft, mid greyish-brown clayey silt; moderate small stones <100mm; extended trench-wide, maximum depth 0.8m. Underlies (3502), overlies (3503)
	INTERPRETATION:	*Made-ground deposit overlying services*
	(3504)	Indurated, light grey concrete; extending NE/SW across base of trench; encountered 1.3m below ground level, underlying services; only partially visible in places
	INTERPRETATION:	*Possible concrete capping of a culvert*
RESULTS: No significant archaeology present		

5.36 Trial Hole 36

TH 36 measured 3m (NE/SW) × 2.5m (NW/SE) × 0.65m (maximum depth).

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 58977 72947 Located on High Street at SE end of junction with Bridge Street	(3600)	Indurated, black tarmac; extended trench-wide , maximum thickness 0.06m. Overlies (3601)
	INTERPRETATION:	*Tarmac surface*
	(3601)	Indurated, light grey concrete; extended trench-wide , maximum depth 0.19m. Underlies (3600), overlies (3602)
	INTERPRETATION:	*Concrete bedding layer for (3600)*
	(3602)	Friable, mid greyish-brown clayey silt; frequent small stones < 90mm; extended trench-wide , maximum depth 0.45m. Underlies (3601), overlies (3603)
	INTERPRETATION:	*Made-ground deposit overlying services*
	(3603)	Masonry; rough-hewn stones; light grey cement bonding + frequent charcoal flecking; encountered 0.65m below ground level, appeared to extend over full extent of the trench. Underlies (3602)
	INTERPRETATION:	*Structural remains comprising cellarage, potentially relating to former late medieval/early post-medieval property on the E side of the northern approach to Bridge Street*
COMMENT: Cellar (3603) was only partly visible in the base of the TH.		

5.36.1 Discussion

Cellar (3603) was only partly visible in the base of the trial hole through a small opening in the roof. The cellar appeared to extend beneath the full extent of the trial hole; whilst it appeared to have been partly truncated by previous engineering works, the remains appeared to be quite substantial. The cellarage may potentially be as early as early as the 14th century but interpretation was necessarily constrained by the limited nature of the excavation.

5.37 Trial Hole 37

TH 37 measured 3m (NE/SW) × 1m (NW/SE) × 2m (maximum depth) (*Plate 77*).

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 59490 72375 Located on Temple Gate, opposite Temple Gate car park	(3700)	Indurated, black tarmac; extended trench-wide, maximum depth 0.15m. Overlies (3701)
	INTERPRETATION:	*Tarmac surface*
	(3701)	Indurated, light grey concrete; extended trench-wide, maximum depth 0.5m. Underlies (3700), overlies (3702).
	INTERPRETATION:	*Concrete bedding layer for (3700)*
	(3702)	Friable, dark greyish-brown clayey silt; moderate brick rubble, occasional small stones; extended trench-wide, maximum thickness 1.4m to limit of excavation. Underlies (3701)
	INTERPRETATION:	*Post-medieval made-ground deposit overlying and surrounding services*
RESULTS: No significant archaeology present		

Plate 77: View to the SE of TH 37

5.38 Trial Hole 38

TH 38 measured 2.4m (NE/SW) × 0.8m (NW/SE) × 1.2m (maximum depth) (*Plate 78*).

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 59473 72392 Located on Temple Gate, 20m to the NW of TH 37	(3800)	Indurated, black tarmac; extended trench-wide, maximum depth of 0.1m. Overlies (3801)
	INTERPRETATION:	*Tarmac surface*
	(3801)	Indurated, light grey concrete; extended trench-wide, maximum thickness of 0.30m. Underlies (3800), overlies (3802)
	INTERPRETATION:	*Concrete bedding layer (3800)*
	(3802)	Soft, black sandy clay; extended trench-wide, maximum depth 0.74m to limit of excavation. Underlies (3801)
	INTERPRETATION:	*Modern made-ground overlying and surrounding services*
RESULTS: No significant archaeology present		

Plate 78: View to the SE of TH 38

5.39 Trial Hole 39

TH 39 measured 2.0m (NE/SW) × 0.66m (NW/SE) × 1.2m (maximum depth) (*Plate 79*).

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 59462 72405 Located at NW end of Temple Gate, near traffic light crossing	(3900)	Indurated, black tarmac; extended trench-wide, maximum depth 0.1m. Overlies (3901)
	INTERPRETATION:	*Tarmac surface*
	(3901)	Indurated, light grey concrete; extended trench-wide, maximum depth 0.38m. Underlies (3900), overlies (3902)
	INTERPRETATION:	*Concrete bedding layer for (3900)*
	(3902)	Compact, light reddish-brown sand; very frequent gravels; extended trench-wide, maximum depth 0.25m. Underlies (3901), overlies (3903)
	INTERPRETATION:	*Gravel hard core made-ground deposit*
	(3903)	Firm, mid reddish-brown clayey silt; frequent brick rubble & stone; extended trench-wide, maximum depth 0.83m to limit of excavation. Underlies (3902)
	INTERPRETATION:	*Post-medieval made-ground deposit*
RESULTS: No significant archaeology present		

Plate 79: View to the SE of TH 39

5.40 Trial Hole 40

TH 40 measured 1.3m (NE/SW) × 0.75 (NW/SE) × 1.02m (maximum depth) (*Plate 80*).

Plate 80: View to the NW of TH 40

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 59482 72385 Located on Temple Gate opposite Temple Gate carpark	(4000)	Indurated, black tarmac; extended trench-wide, maximum depth 0.14m. Overlies (4001)
	INTERPRETATION:	*Tarmac surface*
	(4001)	Indurated, light grey concrete + steel reinforcement rods; extended trench-wide, maximum depth 0.5m. Underlies (4000), overlies (4001)
	INTERPRETATION:	*Concrete bedding layer for (4000)*
	(4002)	Friable, mid grey/reddish-brown clayey silt; frequent rubble & brick fragments; extended trench-wide, maximum depth 0.68m. Underlies (4001), overlies (4003)
	INTERPRETATION:	*Post-medieval made-ground*
	(4003)	Masonry; aligned NW/SE; brick; only partially visible at base of TH; extending

LOCATION	CONTEXT	DESCRIPTION
		0.73m (NW/SE) × 0.55m (NE/SW). Underlies (4002)
	INTERPRETATION:	*Brick culvert*
RESULTS: C19 brick culvert observed at base of TH		

5.41 Trial Hole 41

TH 41 measured 2m (NE/SW) × 1m (NW/SE) × 1.5m (maximum depth) (*Plate 81*).

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 59538 72331 Located on Temple Gate, opposite entrance to Temple Meads station	(4100)	Indurated, black tarmac; extended trench-wide, maximum depth 0.1m. Overlies (4101)
	INTERPRETATION:	*Tarmac surface*
	(4101)	Indurated, light grey concrete + steel reinforcement rods; extended trench-wide, maximum thickness of 0.35m. Underlies (4100), overlies (4102)
	INTERPRETATION:	*Concrete bedding layer for (4100)*
	(4102)	Loose, mid greyish-brown sandy silt; frequent brick fragments & rubble; extended trench-wide, maximum depth 1.1m to limit of excavation. Underlies (4101)
	INTERPRETATION:	*Post-medieval made-ground deposit*
RESULTS: No significant archaeology present		

Plate 81: View to the NE of TH 41

5.42 Trial Hole 42

TH 42 measured 2.1m (NE/SW) × 1m (NW/SE) × 1.8m (maximum depth) (*Plate 82*).

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 59546 72325 Located on Temple Gate, opposite entrance to Temple Meads Station	(4200)	Indurated, black tarmac; extended trench-wide, maximum depth 0.1m. Overlies (4201)
	INTERPRETATION:	*Tarmac surface*
	(4201)	Indurated, light grey concrete + steel reinforcement rods; extended trench-wide, maximum depth 0.42m. Underlies (4200), overlies (4202)
	INTERPRETATION:	*Concrete bedding layer for (4200)*
	(4202)	Firm, mid red/greyish-brown silty clay; frequent brick fragments & rubble; extended trench, maximum depth 0.65m. Underlies (4201), overlies (4203)
	INTERPRETATION:	*Post-medieval made-ground deposit*
	(4203)	Masonry; aligned NW/SE; rough-hewn stone blocks measuring < 450mm × 300mm × 290mm; dimensions as found 0.95m (NE/SW) × 0.5m (NW/SE) × 0.65m; irregular coursing. Underlies (4202), overlies (4204)
	INTERPRETATION:	*NW/SE aligned wall; no dating evidence recovered*
	(4204)	Loose, mid greyish-brown sandy silt; occasional fragmentary animal bone; extended trench-wide, maximum depth 0.32m to the limit of excavation. Underlies (4203).
	INTERPRETATION:	*Post-medieval levelling layer*
RESULTS: NW/SE aligned masonry foundation revealed		

5.42.1 Discussion

Wall foundation (4203) would appear to be identifiable with a property situated on the former extent of Bath Parade and shown in roughly this location on Ashmead's plan of 1828.

Plate 82: View to the SE of TH 42

5.43 Trench 43

The trench measured 194m (NW/SE) × 0.75m (NE/SW) with a depth of 1.3-2.10m (*Plates 83-8*).

LOCATION	CONTEXT	DESCRIPTION
NGR: ST 59448 72416 (NW end) ST 59595 72277 (SE end) Located on Temple Gate	(4300)	Indurated, black tarmac; extended trench-wide, maximum depth 0.12m. Overlies (4301)
	INTERPRETATION:	*Tarmac surface*
	(4301)	Indurated, light grey concrete; extending trench-wide, maximum depth 0.50m. Underlies (4300), overlies (4302), (4304), (4306), (4310)
	INTERPRETATION:	*Concrete bedding layer for (4300)*
	(4302)	Loose, dark grey brown sandy silt; frequent rubble, brick fragments and charcoal flecks; extended 10m (NW/SE) × 0.75m (NE/SW) × 1.06m (maximum thickness to limit of excavation). Underlies (4301)
	INTERPRETATION:	*Made-ground/levelling associated with C19 redevelopment activity*
	(4303)	Masonry; aligned NE/SW; large rough-hewn stone blocks < 490mm × 320mm × 100mm; dimensions as found 0.73m (NE/SW) × 0.55m (NW/SE); encountered at base of the trench, 1.50m below ground level. Same as (4303) in TH 40. Underlies (4304), overlies (4308)
	INTERPRETATION:	*C19 culvert*
	(4304)	Firm, mid grey/reddish-brown sandy clayey silt; frequent brick fragments, moderate charcoal flecking; extended 9m (NW/SE) × 0.75m (NE/SW) × 1.10m (maximum depth). Underlies (4301), overlies (4303) & (4305)
	INTERPRETATION:	*Made-ground deposit*
	(4305)	Masonry; aligned NE/SW; rough-hewn stone; friable, light grey cement bonding material; dimensions as found 0.73m (NE/SW) × 0.65m (NW/SE); encountered at base of trench, 1.5m below ground level. Underlies (4304), overlies (4308)
	INTERPRETATION:	*Wall (4305) may relate to a former property on what was formerly Bath*

LOCATION	CONTEXT	DESCRIPTION
		Parade, as depicted on Ashmead's 1858 plan
	(4306)	Firm, yellowish-brown sandy silt; frequent crushed brick & rubble; extended 4m (NW/SE) × 0.75m (NE/SW) × 0.6m (maximum depth). Underlies (4301), overlies (4309)
	INTERPRETATION:	*Modern levelling layer*
	(4307)	Soft, black/dark brown silty clay; frequent charcoal; extended 4m (NW/SE) × 0.75m (NE/SW) × 0.55m (maximum depth). Underlies (4309), overlies (4308)
	INTERPRETATION:	*Made-ground associated with C19 redevelopment*
	(4308)	Firm, mid reddish-brown clay; encountered 1.64m below ground level at limit of excavation. Underlies (4303), (4305), (4307), (4314) & (4306)
	INTERPRETATION:	*Natural Geology*
	(4309)	Cobbling; stone cobbles < 300mm × 250mm × 220mm; encountered 0.82m below ground level; extended 1.4m (NW/SE) × 0.75m (NE/SW) × 0.22m (maximum depth); truncated by modern service trenches. Same as (4311), underlies (4306), overlies (4307)
	INTERPRETATION:	*Former cobbled surface*
	(4310)	Compact, light yellowish-grey sand; very frequent angular gravel; extending 10m (NW/SE) × 0.75m (NE/SW) × 0.23m (maximum depth). Underlies (4301), overlies (4311)
	INTERPRETATION:	*Gravel hard core, bedding layer for (4309)*
	(4311)	Cobbling; stone cobbles < 300mm × 250mm × 220mm; encountered 0.82m below ground level; extended 7m (NW/SE) × 0.75m (NE/SW) × 0.22m (maximum depth); truncated by modern service trenches. Same as (4309), underlies (4310), overlies (4312)
	INTERPRETATION:	*Former cobbled surface*
	(4312)	Loose, mid greyish-brown sandy clayey silt; very frequent rubble; extended 8m

LOCATION	CONTEXT	DESCRIPTION
		(NW/SE) × 0.75m (NE/SW) × 0.48m (maximum depth). Underlies (4311), overlies (4313)
	INTERPRETATION:	*Post-medieval made-ground/levelling layer*
	(4313)	Soft, mid reddish-grey brown clayey sandy silt; limestone mortar lenses & occasional brick rubble; extended 8m (NW/SE) × 0.75m (NE/SW) × 0.55m (maximum depth). Underlies (4312), overlies (4314)
	INTERPRETATION:	*Post-medieval made-ground/levelling layer*
	(4314)	Masonry; aligned (NE/SW); rough-hewn stone < 410mm × 350mm × 210mm; encountered 1.70m below ground level; dimensions as found 0.71m (NW/SE) × 0.75m (NE/SW) × 0.21m; built directly over natural geology (4308). Underlies (4313), overlies (4308)
	INTERPRETATION:	*Wall possibly identifiable with a former property on the former Bath Parade, as depicted on Roque's map of 1750*
	(4315)	Soft, very dark grey brown clayey silt; very frequent charcoal & moderate rubble fragments; extending 9.5m (NW/SE) × 0.75m (NE/SW) × 0.59m (maximum depth). Underlies (4311), overlies (4316)
	INTERPRETATION:	*Post-medieval made-ground/levelling layer*
	(4316)	Masonry; rough-hewn light grey limestone < 220mm × 150mm × 110mm; irregular coursing; single course surviving; encountered 1.56m below ground level; 2.1m (NW/SE) × 0.35m (NE/SW) × 0.15m.
	INTERPRETATION:	*Wall possibly identifiable with a property shown on Roque's map of 1750 as being located on the former Bath Parade*
Results: See discussion below		

Plate 83: View to the NE of cobbled surface (4309)

Plate 84: View to the NE of wall foundation (4305)

Plate 85: View to the NW of Trench 43

Plate 86: View to the SW of cobbled surface (4311)

Plate 87: View to the NE of wall foundation (4314)

Plate 88: View to the N of wall foundation (4316)

5.43.1 Discussion

The trench extended for some 194m NW/SE along Temple Gate and served to facilitate the insertion of a replacement section of water pipe linked to the existing main. Depth varied according to the presence of services crossing the trench at different depths and on varying alignments.

NE/SW wall (4305) (*Plate 84*) was revealed in the trench base at about 1.50m below ground level and comprised a single course of rough-hewn masonry with a friable light grey cement bonding material. As seen within the trench, the masonry remains measured 0.73m (NE/SW) × 0.65m (NW-SW). No dating evidence was recovered from either the wall or the surrounding deposits but it would appear likely that the wall related to a property formerly situated on Bath Parade, as shown on Ashmead's plan of 1828 map, and which was demolished during 19th -century redevelopment.

6 Discussion of results

Whilst an abundance of documentary evidence is available to suggest that the pipeline route extended through the historic core of the medieval walled city, the results of this programme of archaeological observation confirm that survival of significant archaeological deposits and features is limited within the area impacted by the engineering ground works.

As might be expected within an urban environment, the archaeology revealed a widespread sequence of disturbance extending throughout the study area which would appear to relate to previous engineering works carried out during in the late 19th -early 20th centuries, with further service installation and carriageway works causing additional significant levels of intrusion.

Of the 42 trenches excavated, 14 contained significant archaeological features and/or deposits whilst the remainder confirmed the extent of modern intrusion and the level of impact on the archaeological record.

Commencing at the SE extent of the scheme, at the NW extent of Temple Gate, Trench 19 revealed a series of modern made-ground deposits arising from modern carriageway improvements. These modern deposits had further been truncated by subsequent service installation. The trench extended to a maximum depth of 1.30m, which remained above the level of natural geology and which suggests the possibility that archaeological deposits or features may survive at greater depth.

To the SW of Trench 19, along the extent of Temple Gate, Trial Holes (TH) 38-42 were opened prior to the excavation of Trench 43 to ensure that trenching excavations would not affect existing services. TH 38, 39 and 41 contained no significant archaeology, the stratigraphic profile revealing modern made-ground deposits and extensive truncation resulting from the installation of modern services, which crossed the THs on varying alignments.

A brick culvert (4003) aligned NW/SE was located in the base of TH 40, encountered 1.02m below ground level (*Plate 80*). The culvert was of rough-hewn masonry construction and appeared to be of 19th -century date. TH 42 located opposite the entrance to Temple Meads Railway Station contained a small section of wall (4203) aligned NW/SE; dimensions, as found, were 0.95m (NE/SW) × 0.5m (NW/SE) × 0.65m (*Plate 82*). Wall (4203) may relate to a former property on the former Bath Parade, as shown on Ashmead's plan of 1828. The wall appeared to be constructed directly onto a post-medieval levelling layer (4204), which comprised loose, mid greyish-brown sandy silt containing occasional small animal bone fragments. No dating evidence was recovered from the wall or surrounding deposits.

Trench 43 was a long, open-cut trench extending NW/SE along Temple Gate. The trench was opened for the insertion of a replacement section of water main to connect with the existing pipework. The trench was 1.3-2.10m deep, depth being dictated by the presence of existing services crossing the trench at varying depths on differing alignments.

Wall (4305) aligned NE/SW was encountered at the base of the trench, some 1.50m below ground level and comprised a single course of rough-hewn masonry bonded with a friable light grey cement and measuring (as found) 0.73m (NE/SW) × 0.65m (NW-SW) (*Plate 84*). No dating evidence was recovered from either the wall or the surrounding deposits but it would appear likely that the wall relates to a property situated on the former Bath Parade, as depicted on Ashmead's plan of 1828 map, and which would have fallen victim to 19th -century redevelopment.

Progressing to Victoria Street, a 400m trench (Trench 17) was excavated along an area considered to be a previously undisturbed by the 19th -century water main (*Plates 37-41*). However, excavation revealed modern made-ground deposits and levelling layers resulting almost certainly from development activity during the early 1870s, when Temple Street and Thomas Street, together with a number of the densely packed tenement plots between these two streets and between Temple Street and Pipe Lane, were impacted by works associated with the laying-out of Victoria Street (BA 2012, 55). The trenching also revealed a significant number of modern service trenches running on varying alignments and reaching depths of 0.3-1.6m below ground level, which have clearly exerted a considerable impact upon any surviving archaeological features or deposits. Three wall foundations were encountered in section, which appeared to relate to 19th -century properties formerly aligned along the western extent of Temple Street and eastern extent of Thomas Street. In all three cases, the under- and overlying deposits were sterile and no dating evidence was covered. The trench attained a maximum depth of 2.05m below ground level, at which level natural geology was encountered.

A section of pipeline traversed the historic core of the city, now known as 'Castle Park'. This section of work comprised eight smaller intrusions (Trenches 5, 6, 23, 24, 27, 28, 31 & 32) and three large open-cut trenches (Trenches 24, 25 & 26). An abundance of documentary source material attests to intensive activity in this area during the late Saxon/medieval period; however, the results of previous archaeological fieldwork investigations clearly indicate a paucity of surviving material evidence, due chiefly to the impact of late post-medieval and modern disturbance.

The majority of the destruction in this area was inflicted during the intensive bombing campaign carried out by the Luftwaffe in 1940-1 and by postwar clearance. This included the creation of a car park and the landscaping of Castle Park. Earlier disturbance included the widening of Dolphin Lane to form Dolphin Street, which involved the loss of properties along the street frontage, and the creation of Bridge Street in the late 1760s, which replaced the Shambles/Worshipful Street, an area with origins pre-dating the 13th century (Neale 2000).

The results obtained from Trenches 23-28 and Trench 31 largely support those of previous investigations. These trenches were located in the sloping grassed area between the raised ground around the shell of St. Peter's Church and the former Back Bridge Street alignment.

This section of pipeline connected to pipework previously laid by Bristol Water along the line of Back Bridge Street (BA 2013). A trench excavated within this grassed area at that time revealed a large quantity of demolition material associated with the postwar clearance, representing late 18th -20th -century buildings and associated cellarage fronting onto Back Bridge Street. Previous excavations in this same area revealed that demolition material reached depths of up to 4.5m (Hurst 1964).

Two trenches were originally excavated for the insertion of a connecting valve in the grassed area of Castle Park to the W of St. Peter's Church. Trench 5 contained nothing of archaeological significance: the 19th –century main was encountered 1.50m below ground level and the trench profile showed a series of modern made-ground deposits (*Plates 14 & 15*). Trench 6 come 5m N of Trench 5 exhibited a similar profile except that a cellar wall (605) survived on the E section of the trench (*Plates 16-18*). Brick wall (605) was encountered 0.84m below ground level and survived to seven courses. The bricks were stamped 'Malago Colliery & Brickworks' and were thus probably manufactured in Bedminster where a brickworks is known to have operated from the 1850s until 1897/1902, although information is limited. This wall possibly represents the basal coursing of cellarage located at the eastern extent of Dolphin Street, possibly representing Nos. 4-5 Dolphin Street, which was formerly occupied as the premises of 'Frederick H. Barton outfitters'.

Trench 32 incorporated Trenches 5 and 6 but extended further to the W (*Plate 66-75, figs. 21 & 22*). The partial remains of two cellars extended NW/SE along the length of the trench: (3203) at the NW end and (3206) to the SE. Structure (3203) was of rough-hewn, cement-bonded masonry blocks and aligned NW/SE, with a partial return noted at both the NW and SE ends. The thickness of the NW/SE wall (0.65m) would imply an external wall. Three stone steps at the NW end of the foundations descended into the cellar; a piece of rusted iron set into the second step may represent a door hinge. A recessed area on the NE-facing elevation of the NW/SE wall measured 0.72m (NW/SE) × 0.38m (NE/SW) and may have been the remains of a window opening or coal chute. Patches of pale yellowish-white plaster (3204) adhered to the internal wall elevation and was friable in texture.

These two properties were separated by a horizon of silt and rubble infill (3205) between walls (3203) and (3206).

Structure (3206), situated to the SE, extended 6.60m NW/SE, with a partial NE/SW return at the NW end. Modern service trenching truncated the NW/SE section of the wall at its SE end whilst the NE/SW return was truncated to the E by the water main trench. As in the case of (3203), the thickness of the NW/SE wall (0.65m) would imply an external wall and the NE-facing elevation of the NW/SE wall similarly contained a recess, here surviving to 0.43m (NW/SE) and 0.64m (NE/SW). The recessed area was plastered.

Both structures had been truncated by the water main trench along the eastern extent. They may relate to properties formerly occupying the E side of Dolphin Street, as shown on Rocque's map of 1750 and Ashmead's 1828 plan. Comparison with Ashmead's 1855 map suggests that (3203) could be identifiable with No. 4 Dolphin Street and (3206) with No. 2 Dolphin Street. Analysis of mortar samples and samples of wall plaster taken from these structures indicates an 18th –or early 19th –century date and may suggest that these building foundations do in fact relate to former properties that occupied Dolphin Street before the road was widened.

Trench 25 also revealed evidence of significant archaeological features (*Plates 51-53)*. Its location in the paved area immediately W of St. Peter's Church and E of Trench 32, on the line of the former Dolphin Street and its junction with Bridge Street, represents an area previously identified by Border Archaeology as being of very high archaeological potential (BA 2012). Previous investigations in this area and in the immediate vicinity have revealed evidence of features ranging in date from Saxon to late post-medieval. These include a section of Saxon double-ditch identified in excavations carried out in the early 1960s at the junction of Mary le Port Street and Dolphin

Street and which was interpreted either as a part of the defensive circuit of the *burh* or as a substantial tenement boundary (Hurst2509 1964, 265; Watts & Rahtz 1985, 65-6).

Excavations carried out in 1970 to the E of Dolphin Street exposed structural remains of probable 12th -century date built up against the W elevation of the town wall (Boore 1972, 7-11). Evidence of medieval or post-medieval structural remains was also identified from photographs documenting large-scale water mains trenching along the line of Dolphin Street in the 1970s (although there are no associated records relating to these finds). These results suggest that, unlike the area of poor archaeological preservation between Bridge Street and the river, Dolphin Street had been less severely affected by aerial bombardment and subsequent clearance.

A roughly square (1.5m–2m) brick chamber (2509) was identified at the northern end of the trench and this contained an archway leading into a narrower section of brickwork; the main chamber exhibited evidence of whitewash but this was not apparent within this arched area (*Plate 51*). It was unclear whether the chamber had been blocked at a later date and the arch provided an opening into a tunnel or channel or whether the present dimensions reflect those of its original construction. Two interpretations would appear possible in respect of this structure, the first of which would seem the more likely:

- That it was an access chamber into a tunnel or channel that had subsequently been sealed-off. The location of this chamber and tunnel beneath the course of Dolphin Street and its probable alignment with respect to the river would suggest a drainage feature.
- That it formed a small storage area associated with cellarage beneath the properties on Dolphin Street with access from above, later sealed with capstones.

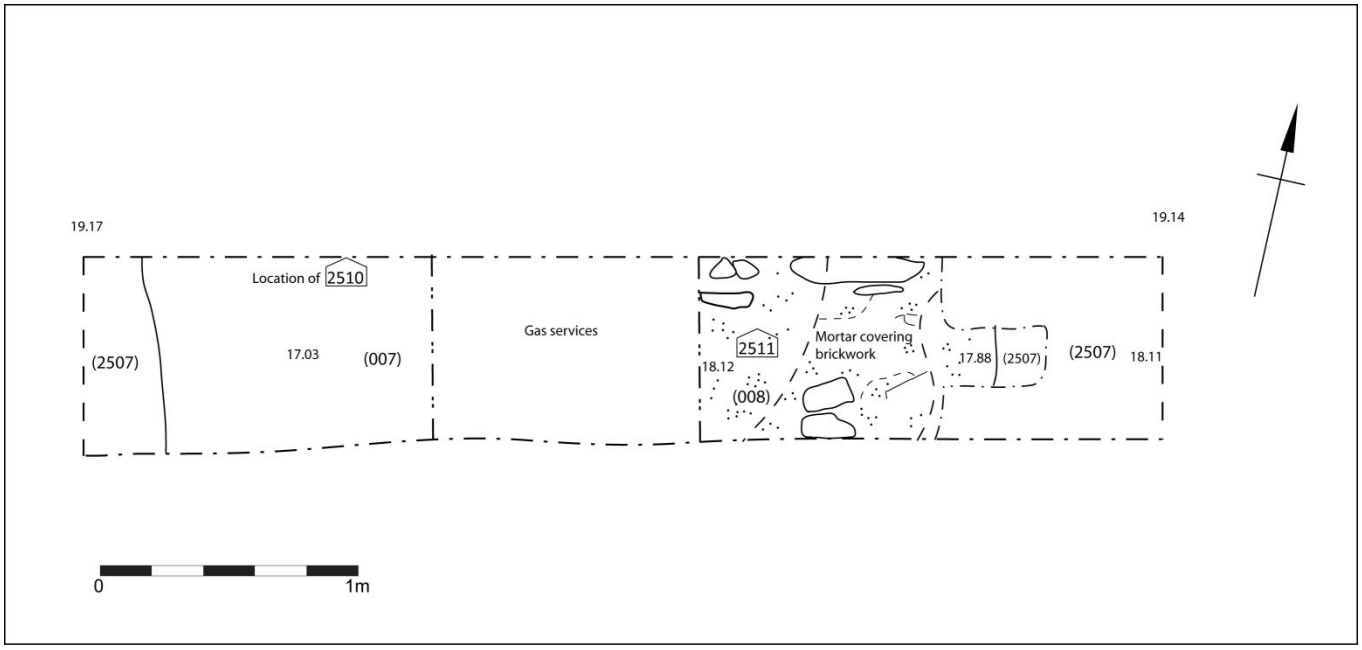


Fig. 23: Trench plan showing masonry (2511)

Two sections of extant masonry were also revealed in Trench 25 (NGR: ST 59082 73091), located roughly opposite the junction with the former (St) Peter Street and associated with the site of 'St Edith's Well', which is first attested in a documentary source of the late 14th century. The first of these (2511) (NGR: ST 59082 73091) comprised grey sandstone masonry bonded with compact grey mortar extending for a distance of 1.15m, at which point it was truncated by a gas main. No visible form or structure was evident and was only present at the very base of the trench (*Plate 89, fig. 23*). A small void was created into the underlying well structure (2518) during the excavation. Measurements were taken through this void to reveal a depth of 23m and further excavation was halted. It seems probable that (2511) was capping material associated with the closure of the well. It was also apparent that no backfill material had been used within (2518) and for health and safety considerations precluded further investigation (*Plate 89*).

Plate 89: NE-facing view of (2511) capping well (2518)

The gas main also truncated probable wall (2510), which comprised four visible courses of unworked pink sandstone masonry set in a light pinkish compact mortar (*Plate 90*). The original dimensions of this wall had been lost through truncation, although its width survived to 1.1m (NW/SE). It is presumed that this feature was associated with (2518), either as a superstructure or forming a part of an adjoining property.

Plate 90: View NE showing SW-facing elevation of (2510)

A well originally known as 'St. Edith's Well' is recorded in a will of 1391 located at the junction of Dolphin Street and (St) Peter Street (Boucher 1939, 96) (HER 39M). Whilst this is the earliest known documentary reference to the well, the dedication could indicate an earlier, pre-Conquest origin, referring to one of two known saints named 'Edith', both of Saxon Royal birth; whilst neither had any clear association with Bristol, the cult of St Edith of Wilton was the more widespread (Boucher 1939, 96). The well became known as 'St. Peter's Cross' after 1458, following the erection of a hexagonal two-storey superstructure surmounted by a stone cross. This was funded by William Canynge, who owned several properties on Peter Street, to prevent contamination of the water supply in what was at that time a distinctly insalubrious neighbourhood served by an open sewer running centrally down the street. By 1546, the structure is referred to as 'Saynt Peter's plumpe', evidently alluding to the installation of pumping apparatus at some point during the intervening period following the erection of the cross; subsequent records include maintenance agreements, one of which refers to 'plompe work, timber work and iron work' (Boucher 1939, 100)

St. Peter's Pump remained in use until 1766, when the superstructure surmounting the well was removed and the fabric re-erected in the grounds of Stourhead House, while the well shaft was re-excavated and a new conduit house (HER 471M) built slightly to the E of the original structure. This coincided with a programme of street improvements that included the widening of Dolphin Street and the incorporation of the Shambles/Worshipful Street into Bridge Street. The second shaft was sunk at the junction of Peter Street and the newly-widened Dolphin Street and was enclosed in a building which rose to a height level with the first storey of the adjacent property, with entrances from both streets (Boucher 1939). The well was finally closed in 1887 on public health grounds and the structure incorporated into the fabric of No. 4 Dolphin Street, which itself incurred substantial damage from aerial bombardment in 1940 and was later demolished.

As detailed investigation of the well structure (2518) was not possible, no dating evidence was recoverable to indicate whether (2518) represented the original well or its replacement. Examination of the mortar used in the construction of both the capping (2511) and the probable wall (2510) would suggest this was the later shaft; however, as (2511) only relates to the capping and not the actual well structure, this remains inconclusive. Whilst it would appear likely that this material was contemporary with the closure of the well, this remains unproven and could potentially represent later capping. It also seems probable that wall (2510) was associated with the well. However, this wall cannot be shown to be contemporary with or to relate to the well due to the effect of truncation resulting from the installation of a gas main.

The site of the medieval St Edith's Well can be securely identified from two descriptions in William Worcestre's *Itinerary of Bristol* (compiled *c*.1480) placing the wall in the middle of Dolphin Street at the junction with St Peter's Street.

The first description refers to Dolphin Street (then called 'Defence Street') as 'beginning from the end of the road called 'The Shambles' (shown on Rocque's map) starting right at the four square place along the street, crossing St Peter's Street in front of the new fountain made by the Canynges estate as a tall building of freestone' (Neale 2000, 56-7).

The second describes the course of Dolphin Street, 'coming from Newgate as far as the second lane running straight into the said road, to the street called St Peter's Street in front of the new well of freestone, newly set up and built out of the estate of William Canynges, at the crossing of the said road entering and defending the great wall between the castle and the town of Bristol' (Neale 2000, 172-3).

The description given by Worcestre appears to place the medieval well in the middle of the junction of Dolphin Street and St Peter Street, close to line of the city wall. This well was infilled in 1766, contemporary with the extensive road improvement works being carried out in the area during the 1760s-70s, and a new well shaft dug, which was incorporated into the S part of No. 2 Dolphin Street, a corner house situated at the corner of Dolphin Street and St Peter's Street. The well house is visible on Plumley and Ashmead's map of 1828 and subsequent maps of the area up to 1884. The well was closed by the City's Health Authority for sanitary reasons in 1887.

Based on the grid reference obtained for the location of the well-shaft in Castle Park, it appears more likely that this relates to the mid-18th -century well, rather than its medieval predecessor.

The extension of Trench 25 revealed a corner of a wall foundation (2521) extending from the SE-facing section of the trench (*Plate 91*). Comparison with the OS 1st -edition 25-inch map of 1886 suggests this wall foundation relates to a property that formerly stood at the western extent of Dolphin Street; it may possibly represent an internal wall of a cellar beneath a property marked as 'hotel'. The area around Dolphin Street was heavily damaged in the air assault of November 1940 and previous excavation work has confirmed the extent to which archaeological remains have been truncated by landscaping activity in the Castle Park area during the 1970s; the extent to which the foundations may continue NW beyond the trench could not be established.

Plate 91: View SW showing wall foundation (2521) in Trench 25

Trenches 29 and 30 were opened in Bridge Street: Trench 29 was located at the NE end of the street whilst Trench 30 was located in the footpath along its southern extent, near the junction with High Street. Bridge Street was established in the 1760s, replacing the medieval curving alignment of Worshipful Street. Bridge Street contained four-storey dwellings on either side, each having a cellar extending below the street frontage into the middle of the carriageway (Leech 1998). Comparison of the trench locations with Ashmead's map of 1874 would suggest that the arched structures revealed in Trench 29 and Trench 30 represent cellars attached to properties occupying the southern extent of Bridge Street. Structure (3011) in Trench 30 would appear to relate either to No. 23 or 24 whilst structure (2906) in Trench 29 may relate to No. 16 Bridge Street (*Plates 92 & 93*).

Plate 92: View to the N of arched structure (2906) in the S-facing section of Trench 29

Plate 93: View to the NW of arched structure (3011) in the SE-facing section of Trench 30

There is no evidence for post 1760s alterations to the properties along the southern extent of Bridge Street (Leech 1998) and the mortar analysis would appear to confirm this (see Appendix 4). The mortar from (2906) consisted of a fairly hard, mid grey, gritty lime and sand containing frequent lime nodules and small fragments of charcoal. The lime nodules were probably a result of incomplete burning whilst the charcoal had evidently been incorporated during the burning process suggesting a mixed lime and fuel process, such as that found in the usage of a clamp kiln or continuous draw kiln and a probable date of 18th -or early 19th -century is suggested. Consequently, these arched structures would appear to predate the 20th -century rebuilding of properties at the northern extent of Bridge Street.

The arched structures (3011) and (2906) were visible only in the SE-facing sections of the trenches and it was thus not possible to determine the extent of which they may have extended *in-situ* to the NW (*Plates 92 & 93*). To the SE, both arched structures appeared to have been truncated during excavation of the original water main trench *c*. 1960. Structure (2906) in Trench 29 had been backfilled with cement and rubble and structure (3011) in Trench 30 contained a rubble backfill. The rubble would appear to have been contemporary with the post-war clearance of Bridge Street whereas the concrete backfill (2911) and (2912) overlay the water main and thus most likely served as structural support once the main had been laid.

Trenches 26, 27, 28 and 31 all confirmed the extent of impact that occurred during the Second World War and subsequently during the 1970s. All of these trenches revealed evidence of an extensive demolition layer, comprising contexts (2601), (2702), (2802) and (3102), which was composed of a friable sandy silt deposit with frequent inclusions of rubble and brick fragments extending to the limit of excavation in all four trenches. No archaeology was present; however, natural geology was not encountered in any of these trenches and their location along the original alignment of Bridge Street and within the original grounds of St. Peter's hospital (Trench 27) suggests potential archaeology may survive below the designated engineering depth.

Following on from Castle Park, Trenches 2, 3, 4, 7 and 11 were all located on the SE extent of Union Street, over the 19th -century main. Nothing of archaeological significance was revealed in any of these trenches, the archaeological profile displaying a series of modern made-ground deposits and levelling layers. The absence of archaeology is most likely a result of extensive wartime bombing and subsequent redevelopment.

Trench 8 (*figs. 8 & 9*) located at the NW end of Union Street was excavated within an area that had escaped impact by 19th –century mains installation works, with the result that a number of archaeological features survived.

The soak-away (814) (*Plate 23*) encountered 1.15m below ground level at the eastern end of the trench did not appear to have an association with any building in the vicinity and may thus be open to reinterpretation, perhaps representing a posthole at the entrance of St. James churchyard or possibly a boundary fence associated with the area represented on Ashmead's 1855 map as the 'Hay and Coal market'.

The floor surface (813) (*Plate 22*) constructed from rough-hewn masonry and also encountered at a depth of 1.15m below ground level appears most likely to have related to a former footpath or road surface, as no structures are recorded within this area. The floor surface appeared to extend into the baulk, both to the N and S, but had been truncated at the eastern and western limits by modern surface trenches.

Walls (811) (*Plate 24, fig. 12*) and (805) (*Plate 25, figs. 10 & 11*) appeared difficult to associate with structures. Ashmead's plan of 1855 shows that between 1828 and 1855 the Horsefair was realigned and Union Street established; thus, unless it was the case that the basements associated with some properties extended below ground beyond the street frontage into the road, then it would appear more likely that the walls related to buildings shown on Ashmead's earlier map of 1828.

The two trenches excavated in the pedestrianized area of the Haymarket demonstrated the survival of *in-situ* deposits in at least one area of St. James's churchyard, despite heavy disturbance elsewhere by modern infrastructure works. Six inhumations were revealed, with a possible seventh left *in-situ* (*Plates 5-9, fig. 6*). All of the burials were overlain by an accumulation of re-deposited natural (112) resulting from the truncation of earlier graves by later inhumations. The similarity between these deposits and the grave backfills - (132) (125) (130) (123) (124) – obscured all associated grave cuts and disarticulated human bone was thus assigned to (112), as it was not possible to relate any such bone to a specific backfill deposit.

However, notional grave cuts were assigned to each burial and the impact of these on earlier burials was noted. Thus, skeleton (126) had been truncated at its SW extent by grave cut [129] and to the NE by [127]. In view of the fact that St James' churchyard remained in continuous use from the 13th century until its closure in the mid-1850s, it is unsurprising to find clear evidence of inter-cutting burials. Additionally, skeletons (125) and (119) both appeared to have been truncated by 19th -century service-main trenching. There was no evidence to suggest that the cemetery survived undisturbed on the eastern edge of the trench but the possibility cannot be entirely ruled out.

It should be noted that a burial was exposed in the NE corner of the trench during the initial phase of enabling works carried out by Land & Marine prior to the implementation of a programme of archaeological observation, the burial being removed by Somerset & Avon Police and subsequently returned to BA for analysis.

Analysis of the human remains assemblage (see Appendix 1) provided an indication of the demographic profile of the cemetery as a whole. This small group included two young males aged 25-35 years and three other individuals whose age and sex could not be determined. Charnel and disarticulated material was also recovered and this was thought to represent an individual of unknown age and sex, an older woman and a younger individual aged 16-23 years at death.

Whilst a high rate of activity-related markers were noted, measurements of stature corresponded well with data from high-status cemetery groups found elsewhere, which averaged 171cm. Consistent with this, it was noted that one individual (119) had sustained three leg-fractures, all of which were very well-healed and well-aligned, suggesting that he or she received the kind of medical attention available only to the wealthier classes at this time.

Further evidence of the high status was identified in the form of a likely case of gout caused by a rich diet. Dentition was available for analysis in one case (124), as young male who showed no evidence of caries or abscesses; a moderate build-up of *calculus* (hardened dental plaque) suggested a diet high in protein but low in sugar and carbohydrate.

A small sub-circular pit was also revealed cutting into the cemetery soil horizon (112) and backfilled by (137), a black sandy silt containing frequent animal bone and oyster shell. The high frequency of inclusions typical of domestic waste suggests the pit may have had an association with the dwellings erected in the SW corner of St. James's cemetery at the junction of Silver Street and the Horsefair and shown on Millerd's map of 1673.

The three trenches that were excavated at the NW extent of Lower Maudlin Street along the route of the 19th -century main revealed heavy disturbance resulting from 19th -and 20th -century development. However, it should be noted that modern made-ground deposits were visible to the base of the trenching at a depth of 1.99m below ground level and it is thus possible that archaeological deposits or features survive *in-situ* at greater depth within this area.

Three further trenches were excavated in Upper Maudlin Street along the route of the 19th –century main. The first two, located at the NE extent, closest to the junction with Lower Maudlin Street, revealed modern made-ground deposits; however, Trench 13, located opposite Bristol Royal Infirmary, revealed a wall (1306) that had been heavily truncated by the 19th –century water main. Although (1306) survived only in section, the location suggests a possible internal cellar wall relating to a rectangular building which would appear to be shown on Rogue's map of 1750 adjacent to the site later occupied by a Welsh Baptist Chapel, which was erected in 1840-1-3 and demolished in 1978. Subsequent maps - including Ashmead's map of 1855, the fire insurance plan of 1887 compiled by Charles E Goad Ltd and successive editions of the Ordnance Survey – show both the Chapel and the rectangular structure to the NE, which Goad's plan identifies as a warehouse.

Continuing into Perry Road, a trench was excavated immediately to the E of the junction with Lower Park Row. The eastern extent of the trench revealed a wall (1603) running N-S across the trench and truncated by the 19th –century main (*Plate 36*). The wall appeared to relate to a property located at the SW end of Griffin Lane, at the junction with Lower Park Row and Church Lane, as depicted on the 1855 Ashmead map. The thickness of (1603) suggested an external foundation wall.

A trench of 90m (Trench 18) opened at the eastern extent of Park Row revealed no features or deposits of archaeological significance. The stratigraphic profile comprised modern made-ground deposits which overlaid the natural geology, encountered at a depth of 1.4m below ground level. However, this trench was located along the route of the 19th -century main and archaeological deposits or features may thus potentially survive beyond the trench limits.

The final trench at the NW extent of the pipeline route on Park Row (Trench 22) revealed a former road surface (2204), which had been truncated by the 19th -century service trench but which survived in the N-facing section (*Plate 48*). The underlying and overlying deposits were sterile, producing no dating evidence, although it would seem likely that this deposit related to post-medieval surfacing.

7 Bibliography

Border Archaeology, 2012, *Detailed Archaeological Assessment of the Water Mains Replacement Scheme from Knowle Reservoir to Victoria Reservoir Bristol*, BA Report Ref: BA1233BWKV.

Border Archaeology, 2013, *Archaeological Observation: Water Mains Replacement Scheme, Castle Park, Bristol*, BA Report Ref: BA1314BWCPB.

Boore, E.J., 1982, 'Excavation at Peter Street, Bristol 1975-76', *Bristol and Avon Archaeology*, Vol. **1**, 7-11.

Boucher, C.E., 1939, 'St. Edith's Well and St. Peter's Cross, Bristol', *Transactions of the Bristol and Gloucestershire Archaeological Society*, Vol. **61**, 95-106.

Hurst, D.G. (ed.), 1964, 'Medieval Britain in 1962 & 1963', *Medieval Archaeology*, Vol. **8**, 265.

Neale, F. (ed.), 2000, *William Worcestre: the topography of medieval Bristol,* Bristol Record Society, Vol. **51.**

Watts, L. & Rahtz, P., 1985, *Mary le Port, Bristol: Excavations 1962-1963, City of Bristol Museum and Art Galley Monograph No. **7***, Bristol.

7.1 Cartography

04481 – Map of Bristol by J. Plumley & G. C. Ashmead – 1828.

OS 1st -edition 1:500 map – 1885.

OS 1st -edition 25-inch map – 1886.

OS 2nd -edition 25-inch map – 1903.

OS 3rd -edition 25-inch map – 1912.

8 Appendix 1: Human osteology

Catherine Sinnott
Border Archaeology

8.1 Aims and Objectives

The aim of the skeletal analysis is to establish the age, sex, stature of the skeletal material recovered from excavations at St James Church and also to determine if any evidence for pathological conditions such as disease or trauma are present. Disarticulated and charnel skeletal material was also analysed to determine a minimum number of individuals.

8.2 Population Demography

Five individuals were subjected to standard osteological analysis. Skull and pelvis morphology were used to determine the sex of adult individuals studied. These were determined using the standard osteological techniques (Buikstra & Ubelaker 1994). If the skull or pelvis was not present or incomplete, then sexually dimorphic measurements of the long bones were used. Of these, three could not be sexed due to missing elements. Of the two that could be sexed, both were adult males.

Adult age was established using the visual assessment of the auricular surface and pubic symphysis of the pelvis. Where these were not present, sternal rib aging and epiphyseal fusion were used. It was determined that both of the males were aged between 25-35 years of age at death. Age could not be determined for the other individuals. Age and sex data for all individuals have been included in Table 1.1.

Stature was established for all individuals using the standard long bone measurements and equations (Trotter & Gleser 1953, 1977) and stature estimations are included in Table 1.1.

Table 1.1 Demographic table

SK No.	Preservation	Completeness	Age	Sex	Stature
SK 118	Moderate	5-7%	Adult	?	N/A
SK 119	Very good	60-70%	25-35	Male	176.6cm
SK 124	Very good	20-30%	25-35	Male	171.7cm
SK 125	Very good	15-20%	Adult	?	N/A
SK 126	Good	5-10%	Adult	?	N/A

Due to the small individuals studied, it is difficult to determine a demographic profile for this site, however of the two individuals that could be sexed both were males aged between 25-35 years of age at death. The stature of both males fits well in with the average stature for men in the Post-Medieval period which averages about 171cm for men (Roberts & Cox 2003).

8.3 Skeletal Preservation and Completeness

In general, skeletal preservation was moderate to very good. In the majority of cases, bone surface preservation was excellent but there was some occasional exfoliation of the surface and cortical bone. None of the skeletons analysed were complete due to truncation and there was moderate fragmentation of material.

8.4 Skeletal Pathology and Disease

Paleopathology is the study of past health and disease in archaeological populations and is useful as an indicator of health status and other aspects of past lives such as occupation and activity. Due to the overall good preservation of the skeletal remains, there were a number of pathologies observed. In this report, pathologies will be categorised according to their disease category.

8.4.1 Dental Disease

Only one individual had both maxillary and mandibular teeth and alveolar bone present (SK124). This individual had some observable dental pathologies including moderate *calculus* deposits, enamel hypoplasia and periodontal disease. *Calculus* is a mineralised plaque deposited on the enamel or cement of the teeth (Arensburg 1996). *Calculus* is thought to be associated with a protein rich diet (Lieverse 1999); these *calculus* deposits can be seen as a brown deposit adhering to the teeth in Figure 1.1. This individual also displayed some mild enamel hypoplasia, which are lines in the teeth caused by childhood stress during early tooth development. The teeth were also affected by periodontal disease which is an inflammation of the gums and is a common indicator of poor dental hygiene.

Fig. 1. 1: Moderate plaque deposits on the teeth of SK124

8.4.2 Joint Disease

Joint diseases are those that affect the articular surfaces of the skeleton which can be caused by a number of factors. These factors include age, activity levels, weight and can manifest as osteoarthritis (OA) and other degenerative joint diseases. Osteoarthritis is characterised by lipping, porosity and eburnation of the joint surfaces caused by loss of cartilage and is the most commonly occurring joint disease in the archaeological record (Roberts & Manchester 2005, 136). Mild osteoarthritis in the form of bony lipping and porosity was noted on the joint surfaces of SK119, SK124 and SK126. In the case of SK119, the OA was observed on the distal right tibia, which is thought to be in linked to the leg fractures in this individual. OA was also noted in the vertebral joints and the left distal radius and ulna. SK126 displayed lipping and porosity of the right shoulder joint which may be activity related. SK124 exhibits some mild lipping and porosity on the joints of the lumbar vertebrae, ribs and the distal left ulna

A case of probable gout was also identified in the feet of SK125 which exhibited erosive 'punched out' asymmetrical lesions of the left first and fifth metatarsals and their joint surfaces which is typical of gout. Gout is an inflammatory joint disease that causes acute pain and swelling of the feet and is traditionally known as the 'rich man's disease'. This is because it is traditionally associated with obesity, a rich diet and a high alcohol intake (Cox & Mays 2000, 172). Gout commonly affects middle to older aged men and is indicative that SK125 may have originated from a well-off background.

Fig. 1.2: Erosive lesions of gout in the first metatarsal (big toe) of SK125

8.4.3 Trauma

Trauma was noted in two skeletons, SK125 and SK119. SK119 sustained fractures to the posterior process of both tali bones of the ankle joint. This type of fracture is associated with an impact onto the ankle and is a rarely recorded fracture in the medical literature (O'Loughlin *et al.* 2009). SK125 in total sustained three fractures to the legs, both the left fibular shaft and tibial shaft displayed healed fractures. The tibial fracture is a probable spiral fracture and is well healed with only a small amount of displacement and loss of bone length. A spiral fracture is usually caused by excessive torsion. The left tibia measures 35.9cm and the right tibia is 36.6cm. This would have caused a slight limp but there is no evidence of any bony atrophy caused by lack of use. The well healed nature of this leg fracture may be indicative that the fracture was medically treated. The lateral malleolus of the right fibula of the same individual also exhibited a fracture of the distal joint at the ankle. The tibia and the fibula are the most commonly fractured long bones in the human body in modern populations, however fractures of the tibia and fibula are rare in paleopathological studies (Roberts & Manchester 2005).

Fig. 1.3: Comparison between fractured left tibia on the top and corresponding right tibia on the bottom from SK 119

8.4.4 Infectious Disease

Periostitis was noted in three of the individuals studied (SK125, 119,124). Periostitis is a non-specific inflammation of the periosteum which covers and protects the bone surface, this lesion can be caused by trauma, infection or a chronic disease process. SK124 exhibited lesions on the visceral surface of the ribs, some of which were active and more which were well healed. These lesions are indicative of a chronic lung disease such as a chest infection or tuberculosis. In this skeleton, there was also evidence for maxillary sinusitis with speculation and porosity in the maxillary sinuses which indicates this individual suffered from infection of both the upper and lower respiratory tract. SK 125 displayed healed periostitis of both tibiae, which was not active at the time of death. SK 119 presented with healed periostitis of both the femora and tibiae. Periostitis of the leg bones is not uncommon and cannot usually be attributed to a cause.

Fig. 1.4: Periosteal bone on visceral rib surface of SK124

8.4.5 Metabolic Disease

Cribra orbitalia was recognised in SK124, this condition manifests itself as pitting or a perforation of the orbit and is thought to be indicative of iron deficiency anaemia. This was also accompanied by porotic hyperostosis on the external skull which is also symptomatic of the same disease process.

8.5 Activity Markers

Enthesophytes and very marked muscle attachments were noted on all of the skeletons studied. An enthesophyte is a bony lump at the attachment of a tendon or ligament and are thought to be indicative of the overuse of specific muscles. Enthesophytes were noted at the attachment of flexor pollicus longus, deltoid and biceps in the arm in several individuals. Marked muscle attachments were also particularly noted in the arms and shoulders.

Schmorl's Nodes were also noted in three thoracic vertebrae of SK124. A Schmorl's Node is a small herniation of the jelly cushion that pads the space between the vertebrae, when this type of herniation occurs, it causes a slipped disc which can be extremely painful. Schmorl's nodes are thought to be primarily caused by excessive mechanical loading and trauma and may even be linked to spinal arthritis (Üstündağ 2009, Faccia *et al.* 2008).

Fig. 1.5: Schmorl's Node in a thoracic vertebra of SK124

8.6 Charnel and Disarticulated Material

A small amount of charnel and disarticulated material was also recovered during this excavation. When some of the charnel and disarticulated material was analysed, it was decided it was similar enough in size and appearance to suggest it may belong to a single individuals. The majority of the charnel analysed seemed to represent one individual who was an older adult female. This individual presented with abnormal fusion between the sacrum and pelvis which may be age or activity related but would have had a damaging effect on this individual's mobility.

When the disarticulated material was analysed, a minimum number of two individuals was represented. One of these was a younger adult aged between 16-23 years of age at death as evidenced by unfused subadult bones. The other individual was thought to be an older adult. Most of the disarticulated and charnel material was in good to moderate preservation but was frequently fragmented.

8.7 Conclusion

Osteological analysis of this small assemblage has provided a potential indication of the demography of the overall population of this cemetery. This small group included two young males aged between 25-35 and three other individuals that could not be aged or sexed. When the charnel and disarticulated material was evaluated it was thought to represent one individual that could not be aged or sexed along with an older woman and a younger sub-adult aged between 16-23 years of age at death.

The stature measurements that were obtained corresponds well with data known from other Post-Medieval English assemblages and in particular with other high status cemetery groups which average at 171cm (Roberts & Cox 2003). When an average stature is taken of the two St James skeletons that could be measured, the average obtained is 174.1cm.

Despite the small size of the assemblage a number of interesting skeletal pathologies were noted. SK119 in particular had sustained three leg fractures, all of which were very well healed which suggested they had occurred sometime before he died and due to the well aligned nature of the fractures, it is possible they may have received some medical attention. A likely case of gout was also recorded in this group which gives an indication of the high status background of this group. Activity related muscle markers and enthesophytes were widely recorded in the group. Only one individual with dentition was analysed from this group (SK 124), this young man had moderately good dental health with no caries or abscesses but with moderate amounts of *calculus*, which is may be due to a diet high in protein but low in sugar and carbohydrates. SK124 also appears to have also suffered from chronic upper and lower respiratory infection which could be attributed to a number of causes including environmental conditions or a long standing chronic disease process such as tuberculosis.

Despite the high rate of activity related markers, this seems to be a generally high status cemetery assemblage presenting with diseases like gout that are indicative of a rich diet. Evidence for well aligned fractures is potentially indicative of medical care and attention in this group which would have only been available to wealthier classes in the Post-medieval period (Lane 2001).

8.8 References

Arensburg, B., 1996, 'Ancient dental calculus and diet', *Human Evolution* **11**(2), 139-145.

Buikstra, J. & Ubelaker, D., 1994, 'Standards for Data Collection from Human Skeletal Remains: Proceedings of a Seminar at the Field Museum of Natural History' (organized by Jonathan Haas), *Arkansas Archaeological Survey* **56.**

Faccia, K., & Williams, R., 2008, 'Schmorl's nodes: clinical significance and implications for the bioarchaeological record', *International Journal of Osteoarchaeology* **18**(1), 28-44.

Lane, J., 2001, *A Social History of Medicine: Health, Healing and Disease in England 1750-1950*, London

Lieverse, A.,1999, 'Diet and the aetiology of dental calculus', *International Journal of Osteoarchaeology* **9**(4), 219-32.

Mays, S. & Cox, M., 2000, 'Sex determination in skeletal remains', in M. Cox & S. Mays (eds.), *Human Osteology in Archaeology and Forensic Science*, 117-130.

Roberts, C., A. & Cox, M., 2003, *Health & disease in Britain: from prehistory to the present day*, Gloucester.

Roberts, C., & Manchester K., 2005, *The Archaeology of Disease* (3rd edition), Stroud.

O'Loughlin, P., Sofka, C. M. & Kennedy, J. G.,2009, 'Fracture of the medial tubercle of the posterior process of the talus: magnetic resonance imaging appearance with clinical follow-up', *HSS Journal* **5**(2), 161-4.

Trotter, M., 1970, 'Estimation of stature from intact long limb bones', in T. D. Stewart (ed.), *Personal identification in mass disasters*, Nat. Mus. Natur. Hist. Smithsonian Inst., Washington DC, 71-83.

Trotter, M. & Gleser, G. G., 1952, 'Estimation of stature from long-bones of American Whites and Negroes', *American J Physical Anthropology* **9**, 427-40.

Üstündağ, H., 2009, 'Schmorl's nodes in a post-medieval skeletal sample from Klostermarienberg, Austria', *International Journal of Osteoarchaeology* **19**(6), 695–710.

9 Appendix 2: A note on the pottery

K. H. Crooks
Border Archaeology

9.1 Introduction

A total of 22 sherds of pottery were recovered, all from context (803), a made-ground deposit sealing a number of culverts and underlying existing road surfaces in the Union Street/Haymarket area. Context (803) was rich in rubbish and charcoal. Its nature suggested that it may have served as a levelling dump. An additional sherd, of a redware chamber-pot, was later found during backfilling of the trench in the Castle Park area.

The majority of the material suggested a date in the 18th century but a sherd of white glazed ware and a sherd of china were of 19th -century or later date and two joining sherds of a redware pancheon could also date to the 19th century, though an 18th -century date is also possible for this material.

9.2 The pottery

The predominant fabric was North Devon Gravel Tempered Ware, of which nine sherds were present. Two of these were from a dripping dish, with a crudely applied spout/rim and a bright olive internal glaze. A further substantial sherd may have been from a chamber pot with an applied handle. This sherd was more abraded than others of this fabric. Two sherds, probably both from bowls, contained less of the gravel temper and were of the Gravel Free variant. North Devon gravel tempered ware dates to the 17th to 18th centuries.

Six sherds of Sgraffito ware were from Donyatt in Somerset. Four were from dishes with the remaining two probably from bowls; again, the forms suggest an 18th -century date.

A sherd of a tin glazed jar ware in a buff fabric with a white glaze and external blue stripes may have been from a jar or tankard and was most probably manufactured in the city. The fabric dates to between the 16th and the late 18th centuries; a date nearer the end of the range seems likely.

The two joining sherds of a pancheon with an internal clear/tan glaze were almost certainly of local manufacture. A trailed slipware dish was of extremely crude manufacture and in a red fabric with a roughly trailed white slip. A further sherd with trailed slipware decoration was from a bowl. The pottery was generally little abraded suggesting that it may have been re-deposited as levelling material shortly following initial deposition in a dump or midden. However, the sherd of a (?)chamber-pot in North Devon Gravel Tempered Ware was more abraded as would be likely if the deposit consisted of midden material dumped over a period.

9.3 Conclusions

Although the range of pottery was fairly wide, it was generally coarse with locally and regionally sourced wares predominating. The majority of the pottery dated to the 18th century; the sherds of later material might have become incorporated when earlier midden material was deposited as a levelling dump. Another possibility is that they were intrusive in this deposit as a result of disturbance during work on existing utilities.

10 Appendix 3: Clay Tobacco Pipes

D A Higgins

The project produced a total of nine fragments of clay tobacco pipe (three complete bowls, a heel fragment and five stem fragments), none of which appears to have been burnished. These were recovered from two different contexts, as follows:

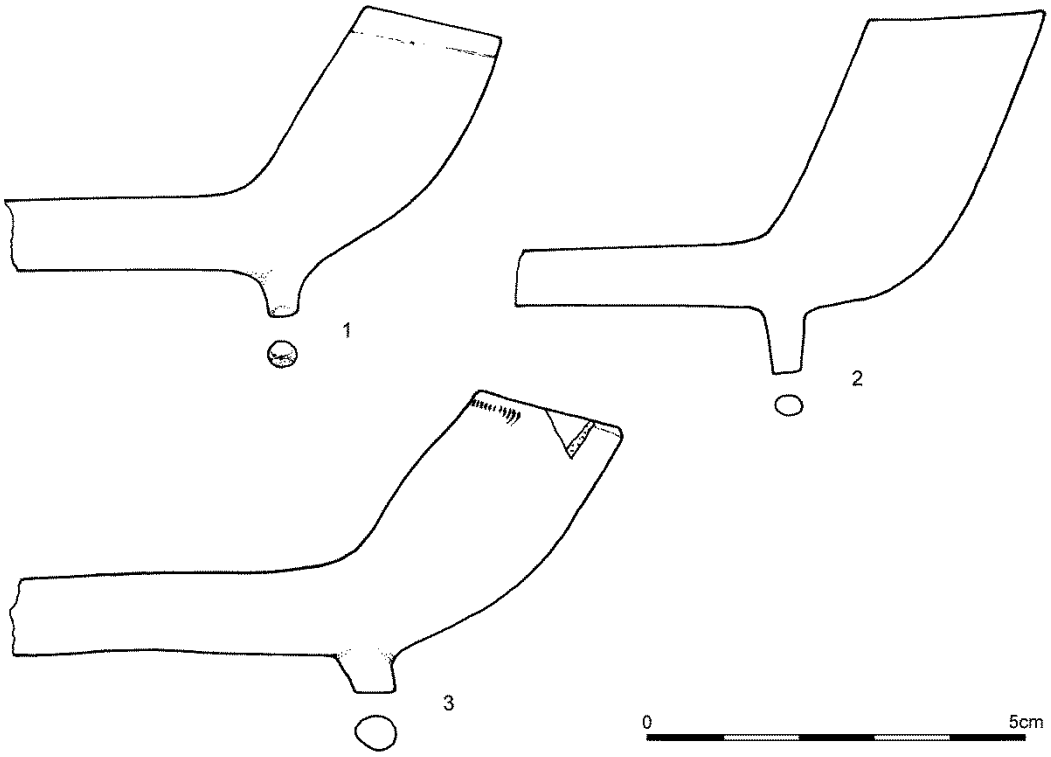
10.1 Trench 7 (702)

This context produced two complete spur pipe bowls, both of which are plain and unmarked. One of the bowls dates from *c*. 1690-1720 and has a large stem bore of 8/64" (*fig. 1*). This pipe has been fairly poorly made since the spur has not been trimmed, the bowl rim is cut but not bottered and the surface shows clear stretch and handling marks from manufacture. There is also a clear mould-line around the rim, which has been lightly milled for just one quarter of its circumference. The seam facing the smoker has quite heavy-handed trimming on it. The second bowl is rather later and probably dates from *c.* 1740-80 (*fig. 2*). This example has a stem bore of just over 4/64" and has been more neatly made, with the end of the long spur having been trimmed and the rim lightly wiped to smooth it. Both of these bowls are typical Bristol-style products and they were recovered from a modern deposit of made ground. Both of the bowls have just over 3cm of surviving stem, suggesting that the ground had not been extensively disturbed since they were originally deposited.

10.2 Trench 8 (803)

This context produced five stems and two bowl fragments, which had been bagged in two separate bags. The pipes in each bag are of a rather different nature, suggesting that there may well have been different horizons within this context, which was described as a charcoal-rich deposit containing abundant pottery fragments and animal bone. One bag contains two relatively clean fragments, both of which have quite thick, chunky stems and large stem bores of 8/64". One is just a stem fragment but the other has part of a small heel surviving. These pieces date from the late 17th century, most likely *c*. 1670-1700.

The other bag contains four stems and an almost complete bowl, all of which have been stained a distinctive brownish colour from burial and all of which are slightly later in date. The stems are rather more slender (although still relatively thick and quite sharply tapering), with stem bores of 5/64" (one example) or 6/64" (three examples). One of them is quite long (104mm), suggesting that these pieces come from a relatively fresh and undisturbed deposit. The bowl is a spur type with a flattened base to the spur, a stem bore of just over 6/64" and a lightly bottered rim that has been half-milled (*fig. 3*). This is a Bristol style bowl of *c*. 1700-30, a date that is consistent with the other stems in this bag. The pipes suggest that the cleaner material from this context was deposited in the late 17th century, with the stained finds dating from the early 18th century.


1
2
3
0
5cm

11 Appendix 4: Mortar assessment

W J Logan
Border Archaeology

Five mortar samples were retained for further analysis.

11.1.1 Trench 29

Sample 7 was taken from a stone-built vaulted cellar structure (2906) within Castle Park. It comprised a fairly hard, mid grey, gritty lime and sand containing frequent lime nodules and small fragments of charcoal. The lime nodules were probably a result of incomplete burning.

11.1.2 Trench 32

Sample 8 was removed from a stone basement structure (3203) in Castle Park. It comprised a hard, light reddish, sand and lime, containing limestone nodules. A single piece of charcoal was observed in the matrix and moderate amounts of small 3mm-5mm rounded sandstones (probably from the sand mix) were also observed.

Sample 9 was described as an internal wall plaster (3204), removed from structure (3203). It appears to comprise a hard, light reddish sand and lime, containing nodules of lime and larger granules of sand, faced with a very hard, predominantly white but discoloured lime sand mix.

The internal walls appear to have been surfaced with an initial mix of sandy lime mortar of the same composition as the bonding material removed from this structure (see Sample 8). The surface finish comprised a much harder lime plaster finish, probably of hydraulic lime. This would have acted as a cosmetic treatment, but also sealed the wall to prevent ingress of moisture into the fabric.

Sample 10 was removed from a stone basement structure (3206) along Dolphin Street in Castle Park. It comprised a hard light grey sand lime containing frequent coal fragments.

Sample 11 was a plaster (3207) internal finish on wall (3206). It comprised a fairly soft white lime and aggregate containing moderate inclusions comprising small pieces of coal/fuel waste. This plaster was 11mm thick and appears to have been applied directly onto the brickwork.

Sample 12 was a plaster (3208) internal finish, also removed from wall (3206). It was a hard, reddish/white sand lime containing frequent regular very small >0.5mm charcoal inclusions.

11.1.3 Conclusion

Sample 7 could be of medieval or early post-medieval date; the charcoal was incorporated in the matrix during the burning process. This would suggest the usage of a mixed lime and fuel process, such as that found in the usage of a clamp kiln or continuous draw kiln. Alternate layers of fuel and limestone were laid in this type of kiln resulting in the lime being intermixed with the fuel residue when it was raked out. The use of wood as a fuel during the lime-burning process could imply pre-industrial or low-level production, suggesting a probable 18th -or early 19th -century date.

Sample 8 was a hard, very sandy lime mortar. The sand probably acted as a mild *pozzolanic* agent, allowing the mortar to set chemically. This mortar appears to have been calcined much more cleanly and was probably 18th -or early 19th -century in date.

Samples 9, 11 and 12 were all wall plasters. Sample 9 was very hard, and probably a chemically set (hydraulic) mortar. Sample 11 was quite soft and was probably an air-drying (non-hydraulic) mortar. Sample 12 was also a hard, probably hydraulically-set mortar. These were also 18th -or early 19th -century.

Sample 10 was a hard sandy lime mortar, containing large quantities of coal fragments. The coal could have become incorporated during the burning process, or was more likely deliberately added as a pozzolan. This would again suggest an 18th -or early 19th -century date for this mortar, as industrial materials became more frequently used for this purpose during the early Industrial period.

Title		Ref	
Archaeological Observation for Bristol Water concerning a Water Main Replacement Knowle Reservoir to Victoria Reservoir Bristol		BA1233BWKV	
Compilation	Claire McGlenn BA		
Editing	George Children MA MCI*f*A		
Issue No.	**Status**	**Date**	**Approved for issue**
1	Final	January 2015	Neil Shurety Dip. M G M Inst M